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A.M.A. SESSION • ATLANTIC CITY, N. J. • JUNE 7-11, 1937

Gastro-Intestinal Diseases

The May Number of the *"Medical Clinics of North America"* is from the Mayo Clinic. It contains 21 clinics of practical medical diagnosis and treatment—exactly the kind of clinical help that the family physician is looking for. You will say that it is one of the most helpful numbers of the "Medical Clinics" that has ever been published.

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OBSTETRIC AMNESIA, ANALGESIA AND ANESTHESIA

THEIR RELATIONSHIP TO SUDDEN DEATH IN LABOR

THADDEUS L. MONTGOMERY, M.D.

PHILADELPHIA

No topic in obstetric procedure is receiving more widespread attention than amnesia and analgesia. Those who practice the art of midwifery are well aware of this fact, for the journals are filled with reports of new methods and assorted combinations, and every patient who comes to register wants first to know what will be done to eliminate the pangs of labor. She expects to fall asleep with the first pain and awake with the baby in her arms, and she is sure from her reading that this is not only feasible but her rightful privilege.

By taking it on themselves to adopt each new obstetric analgesia or anesthesia and announce it as a panacea for women's suffering, lay periodicals play a major rôle in producing this misconception. Their articles are a medley of false impressions and incomplete truths, but they are widely read and exert sufficient popular appeal to force on the profession methods of management that may prove innately unsafe or poorly adapted to peculiar localities and conditions of practice.

Then too, enthusiastic reports in professional journals lead the physician to employ in his obstetric practice methods of analgesia the difficulties and dangers of which are insufficiently emphasized. At the height of popularity of a new method, medical reports seem consistently favorable. Only when the method is taken from the centers of propagation and put to general use do discrepancies and questions arise. This is true of the present widespread use of the barbiturates for the purpose of inducing deep amnesia. While reports of the method have been favorable,[1] individual obstetricians are beginning to question its efficacy, and unfavorable reactions and peculiar deaths are being reported.

So impressed have I been by the number and the nature of anesthetic deaths reported before the Maternal Welfare Committee of the Philadelphia County Medical Society that I have undertaken to determine what part analgesia plays in maternal mortality in that city and to compare the various methods of analgesia on the basis of their safety and efficacy in general usage. The study is based on a five year period, 1931 to 1935 inclusive.

Inspection of the results over this period of time reveals that the general mortality rate has decreased 24 per cent, that this decline is accounted for by a 49 per cent decrease in nonpreventable death rate, and that the preventable death rate has remained uniform (table 1). In the instance of maternal death during labor or within twenty-four hours thereafter there is no lessening of the general rate; the nonpreventable death rate has decreased by 49.3 per cent, and the preventable rate has risen 52.5 per cent; the death rate attributable to errors in judgment and technic on the part of the physician has risen 108.5 per cent, and the proportion of maternal deaths due to these errors has increased 107.3 per cent (table 2).

From these figures one receives the impression that mistakes in judgment and errors in technic as represented by deaths in the intrapartum period account for the slowness of improvement in obstetric practice. This observation is supported by a study of the trend in all other deaths. In all other maternal deaths there is a general decrease of mortality rate of 28.9 per cent, a decrease in the nonpreventable death rate of 48.6 per cent, a decrease in the preventable death rate of 11.1 per cent, and a decrease in the death rate due to errors in judgment and technic on the part of the physician of 41.4 per cent (table 3).

There is an improvement then in all phases of obstetric practice as represented in the group of 876 deaths, but in the smaller group of 220 intrapartum deaths there is such a lack of advancement that no net progress in preventable death rate for general obstetric practice is demonstrable (table 4).

Apparently something is wrong with methods of management in labor, and saddest to relate, whatever is wrong is going more astray with each succeeding year. Probably a number of matters are at fault, but of this complex problem I believe that obstetric amnesia, analgesia and anesthesia constitute an important portion.

In formulating an opinion as to the acceptability of an anesthetic or analgesic method the physician must have in mind the following points: first, safety; second, the amnesic, analgesic or anesthetic properties; third, effect on contractions of the uterus; fourth, advantages or disadvantages in special cases; fifth, untoward reactions and idiosyncrasy; sixth, constitutional effects; seventh, effect on the fetal respiration at birth.

With these considerations in mind let us take note of the agents that were used in the 220 intrapartum deaths, compare their good and bad features and determine the part they played in death (table 5).

Dr. Philip F. Williams, chairman of the Maternal Health Committee of the Philadelphia County Medical Society, gave his permission to use the committee's records; Dr. T. Ruth Hartley Weaver gave her generous assistance in collecting the data.

1. (*a*) Daichman, I., and Shir, M.: Sodium Amytal and Morphine in Labor, Am. J. Obst. & Gynec. **31**: 515-517 (March) 1936. (*b*) Galloway, C. E., and Smith, P. H.: A Study of Nembutal and Scopolamine for the Relief of Pain in Five Hundred Deliveries, ibid. **29**: 207-215 (Feb.) 1935. (*c*) Irving, F. C.; Berman, S., and Nelson, H. B.: Barbiturates and Other Hypnotics in Labor, Surg., Gynec. & Obst. **58**: 1-11 (Jan.) 1934. (*d*) Tritsch, J. E., and Brown, R.: Barbiturates in Primiparous Labors, Am. J. Obst. & Gynec. **29**: 700-710 (May) 1935.

ETHER

Ether, with or without nitrous oxide-oxygen induction, was administered by inhalation to 108 of the patients who died. In one instance it was indicated as the real cause of death and in another as a possible cause. In both cases it was poorly administered. Bad judgment was shown in its selection as an anesthetic agent in one additional case.

Ether appears to be still the most widely used and possibly the safest of anesthetic agents in obstetric practice. It may be employed for analgesic effect in early labor in the Gwathmey technic, as "whiffs" during the second stage, or pushed to complete anesthesia by deep inhalation. It does inhibit the activity of the uterine musculature; its free administration may stop labor pains and its long continuance predispose to relaxation and postpartum hemorrhage.

It has the advantage of simplicity of technic, ease of administration and wide margin of anesthetic safety. It is of essential value for types of delivery that require relaxation of the uterus; namely, decomposition of the breech and internal podalic version and extraction. It can produce greater relaxation than is necessary for low forceps.

Its administration is singularly free of untoward reaction and idiosyncrasy, although patients vary decidedly as to degree of postanesthetic nausea, vomiting and prostration. Its use for inhalation is to be avoided in instances of pulmonary disease. Administered by the open drop method, ether does not interfere with oxygenation of the fetal blood, and only in prolonged and deep anesthesias does anesthetization of the fetal respiratory center occur.

TABLE 1.—*Maternal Deaths in Philadelphia 1931-1935*

	1931	1932	1933	1934	1935	Total
Live births	33,773	32,093	29,528	29,751	29,988	155,133
Maternal deaths	269	267	181	198	181	1,096
Maternal death rate per 10,000 live births	79	83	61	66	60	70
Nonpreventable deaths	126	116	68	62	57	429
Per 10,000 live births	37	36	23	21	19	27
Percentage of total maternal deaths	46.9	43.5	37.6	31.4	31.5	39.2
Preventable deaths	143	151	113	136	124	667
Per 10,000 live births	42	47	38	45	41	43
Percentage of total maternal deaths	53.1	56.5	62.4	68.6	68.5	60.8
Deaths from error in judgment or technic on part of physician	70	75	57	59	56	317
Per 10,000 live births	21	23	19	20	19	20
Percentage of total maternal deaths	26	28	31.4	29.7	28.9	28.9

Comparison of Rates in 1931 and 1935

Maternal death rate	1931—79; 1935—60	Decrease of 24%
Nonpreventable death rate	1931—37; 1935—19	Decrease of 48.9%
Preventable death rate	1931—42; 1935—41	No change (1%)
Death rate from errors in judgment and technic on part of physician	1931—21; 1935—19	Decrease of 9.5%
Proportion of maternal deaths due to errors in judgment and technic on part of physician	1931—26%; 1935—28.9%	Increase of 11.1%

NITROUS OXIDE-OXYGEN

Nitrous oxide-oxygen anesthesia was employed thirty-four times. In one instance the anesthesia was badly taken (or badly given) and death was attributed to its action. In nine cases bad judgment was shown in its selection as the anesthetic agent.

This form of anesthesia has wide usage and great value. Given by a trained anesthetist the margin of anesthetic safety, while not as great as in the case of ether, is nevertheless ample. During the second stage of labor it may be given for short periods with each labor pain and finally pushed to deep anesthesia for delivery.

It has little effect on the contractility of the uterus and predisposes to postpartum hemorrhage only when insufficient oxygen is administered. The rhythm of labor continues throughout, the patient regaining consciousness quickly between pains. As an agent of anesthesia it is of particular value in the types of delivery in which relaxation of the uterus is neither essential nor desired—cesarean section, forceps and spontaneous delivery. Its use is to be avoided when relaxation of the uterus is essential for safe manipulation; e. g., in decomposition of the breech and internal podalic version. It was in disregard to this rule that bad judgment was shown in the selection of gas for 26 per cent of its administrations; in a number of such instances, rupture of the uterus was discovered at the conclusion of labor.

There appears to be very little idiosyncrasy to gas, although some patients take it much better than others. Since it is necessary in obstetric anesthesia to keep the patient "pink," ether has to be given as a complemental agent more often than in other fields of surgery. It is of great importance that sufficient oxygen (at least 20 per cent in long anesthesias) be administered with nitrous oxide; otherwise the fetus in utero may suffer from anoxemia during the administration and be born in a state of apnea. Resuscitation in such cases is difficult.

Nitrous oxide and oxygen anesthesia is expensive. Since the apparatus for its administration is rather cumbersome and the services of a trained anesthetist are essential, the method is confined largely to hospital practice, where it occupies an important position.

TABLE 2.—*Maternal Deaths During or Within Twenty-Four Hours After Full Term or Premature Labor (28-40) Weeks 1931-1935*

	1931	1932	1933	1934	1935	Total
Maternal deaths	44	61	39	37	39	220
Per 10,000 live births	13	19	13	12	13	14
Nonpreventable deaths	24	32	13	12	11	92
Per 10,000 live births	7.1	9.9	4.4	4.3	3.6	5.8
Percentage of maternal deaths	54.5	52.5	33.3	32.3	28.2	41.3
Preventable deaths	20	29	26	25	28	128
Per 10,000 live births	5.9	9.0	8.8	8.4	9.0	8.2
Percentage of maternal deaths	45.5	47.5	66.7	67.6	71.8	58.7
Deaths from errors in judgment or technic on part of physician	12	25	19	21	22	99
Per 10,000 live births	3.5	7.8	6.4	7.0	7.3	6.3
Percentage of maternal deaths	27.2	40.9	48.7	56.7	56.4	45

Comparison of Rates in 1931 and 1935

Maternal death rate	1931—13; 1935—13	No change
Nonpreventable death rate	1931— 7.1; 1935— 3.6	Decrease 49.3%
Preventable death rate	1931— 5.9; 1935— 9.0	Increase 52.5%
Death rate from errors in judgment and technic on part of physician	1931— 3.5; 1935— 7.3	Increase 108.5%
Proportion of maternal deaths due to errors in judgment and technic on part of physician	1931—27.2%; 1935—56.4%	Increase 107.3%

EMPLOYMENT OF THE GWATHMEY METHOD OF ETHER-OIL ANESTHESIA

The rectal injection of an ether-oil mixture as described and advocated by Gwathmey was considered as a possible factor in death in three instances and was injudiciously employed in one of seven cases. The circumstances of the three cases were somewhat similar: rather long labor, more than ordinary bleeding during and immediately after the placental stage, a sluggishly contracting uterus, further bleeding and a gradual lapse into shock when the patient was returned to bed. All three deaths might have been avoided by more efficacious treatment of the patient as the symptoms appeared.

The Gwathmey method of anesthesia, while not so popular as it was five years ago, still occupies a place of importance in the obstetric armamentarium. It, like ether anesthesia, has a wide margin of safety if the patient is watched carefully. Its originator intended it as a method of analgesia for use in the first and second stages of labor. For this purpose it is comparatively successful. It is only slightly effective as an amnesic.

The ether in the rectal mixture, like ether by inhalation, has a tendency to lessen the frequency and force of uterine contractions. An effort has been made to offset this by the addition of quinine; but even so labor is sometimes prolonged and the postpartum retraction of the uterus impaired. I am of the opinion that its administration increases quite decidedly the hemorrhage during the placental stage and that, if this stage is not carefully supervised, serious postpartum bleeding may occur.

This method is particularly well suited to the long labor of some primigravid patients. Without the morphine, but supplemented with pentobarbital sodium, paraldehyde or chloral, it makes a splendid analgesia for short labors. It is associated with no untoward reactions or constitutional effects on the mother. The ether portion of the technic has only limited effect on the respiration of the new-born child, but the morphine, if given inadvertently too near the time of delivery, may produce troublesome narcosis of the fetal respiratory center.

TABLE 3.—*Maternal Death Rates from All Other Conditions of Childbirth 1931-1935*

	1931	1932	1933	1934	1935	Total
Maternal deaths	225	206	142	161	142	876
Per 10,000 live births	66	64	48	54	47	56
Nonpreventable deaths	102	84	55	50	46	337
Per 10,000 live births	30	27	18.6	16.7	15.4	21.2
Percentage of maternal deaths	45.3	4.07	38.7	31.0	32.4	38.4
Preventable deaths	123	122	87	111	96	539
Per 10,000 live births	36	38	29	36.6	32	35
Percentage of maternal deaths	54.7	59.3	61.3	69.0	67.6	61.6
Deaths from errors in judgment or technic on part of physician	58	50	38	38	34	218
Per 10,000 live births	17.5	15.2	12.6	13	12.7	13.7
Percentage of maternal deaths	25.3	24.3	26.7	24.2	23.9	24.8

Comparison of Rates in 1931 and 1935

Maternal death rate	1931—66 1935—47	Decrease 28.9%
Nonpreventable death rate	1931—30 1935—15.4	Decrease 48.6%
Preventable death rate	1931—36 1935—32	Decrease 11.1%
Death rate from errors in judgment and technic on part of physician	1931—17.5 1935—12.7	Decrease 41.4%
Proportion of maternal deaths due to errors in judgment and technic on part of physician	1931—25.3% 1935—23.9%	Decrease 5.5%

CHLOROFORM

Chloroform anesthesia was employed in three patients who died of various causes. It was assumed to play a part in the death of one patient and was injudiciously chosen as an anesthetic agent in a patient with eclampsia.

TABLE 4.—*How Is the Medical Profession Fulfilling Its Responsibilities in the Various Groups of Maternal Deaths? 1931 versus 1935*

	All Maternal Deaths	Maternal Deaths During or 24 Hours After Delivery	All Other Maternal Deaths
Maternal death rate	Decrease of 24%	No change	Decrease of 28.9%
Nonpreventable death rate	Decrease of 48.9%	Decrease of 49.3%	Decrease of 48.6%
Preventable death rate	No change (1%)	Increase of 52.5%	Decrease of 11.1%
Death rate from errors in judgment and technic on part of physician	Decrease of 9.5%	Increase of 108.5%	Decrease of 41.4%
Proportion of deaths due to errors in judgment and technic on part of physician	Increase of 11.1%	Increase of 107.3%	Decrease of 5.5%

I have used chloroform so few times that I am incompetent to discuss its effects, its advantages or its disadvantages. The English still like their chloroform, either for momentary analgesia or more deeply for obstetric anesthesia. The South has never given up the use of chloroform, although ethylene is now being used with favor in many of the medical centers. One fact is known—the long administration of this agent will cause degeneration of the liver, and when liver damage is already existent, as in preeclampsia, the employment of chloroform is inexcusable.

TABLE 5.—*Amnesics, Analgesics and Anesthetics Employed for Patients Who Died During or Within Twenty-Four Hours After Labor*

Agent Used	Number of Deaths in Which Agent Was Employed	Primary Cause of Death	Possible Cause of Death	Poorly Selected
Ether or nitrous oxide-oxygen-ether	108	1 (>1%)	1 (>1%)	1 (>1%)
Nitrous oxide-oxygen	34	0	1 (3%)	9 (26%)
Gwathmey	7	0	3 (42%)	1 (14%)
Chloroform	3	0	1 (33%)	2 (66%)
Spinal	4	2 (50%)	1 (25%)	1 (25%)
Local	4	0	0	0
Pentobarbital sodium	11*	2 (18%)	4 (36%)	2 (18%)
Amytal	8*	0	2 (25%)	2 (25%)
None	40	0	0	0

* Possibly more; these deaths are being subjected to further study.

SPINAL ANESTHESIA

In four of the maternal deaths spinal anesthesia was administered. It unmistakably caused the death of two of these patients; in a third, death seemed more likely the result of it than of the other factors present. The fourth case was a poor risk for spinal injection.

It is the consensus of enlightened medical opinion that spinal anesthesia is a dangerous anesthetic in obstetric practice. It depresses blood pressure when blood pressure is already low, it relaxes the vascular tree when

the latter is already relaxed, it impairs respiration when a normal respiratory excursion and complete oxygenation of the blood are essential, it necessitates placing the woman in the recumbent position with the head dependent when already the flat level position may be productive of syncope, and it trebles the likelihood of shock when intra-abdominal tension falls with delivery of the fetus.

I can see no reason why one should select spinal anesthesia for an obstetric operation, particularly if one has reviewed the literature on the subject and is familiar with the fearful mortality connected with it. However, now and then there comes a wave of popularity for spinal anesthesia and those physicians who have not experienced, or who do not remember, the fatalities of the last one are caught in its flood.

Contractions of the uterus continue normally under spinal anesthesia and retraction of the uterus follows the expulsion of the fetus and placenta promptly and firmly. The anesthetic, however, interferes with the expulsive action of the abdominal muscles; under its influence the patient never advances spontaneously beyond the first stage of labor. The drug has no effect on the respiratory center of the fetus.

LOCAL ANESTHESIA

Local anesthesia has no detrimental effect on the constitution of the patient or the mechanism of labor. It is the least depressing of all methods and should occupy a more extensive place in obstetric practice than it does at present.

Its action is confined to the tissue in which it is injected. It does not weaken the contractions of the uterus, delay labor or predispose to postpartum hemorrhage. Retraction of the uterus after the third stage and involution during the puerperium approach more nearly the natural than under any other form of anesthetic.

Some years ago I compared the results in a series of fifty primiparas whom I delivered under the routine anesthetics—gas, and gas-ether—with an equal group I delivered with morphine-scopolamine analgesia and infiltration of the perineum with procaine hydrochloride. Episiotomy and immediate perineal repair were performed as a routine in each group. Without going into the details of the study, it may be stated that the lessening of blood loss in the local anesthesia group was amazing, and the rapidity of delivery of the placenta, the quickness of the baby's cry and the smoothness of convalescence were most gratifying.

Because of these advantages, local anesthesia is a method peculiarly well adapted to the situation in which loss of blood, relaxation of the uterus, fall in blood pressure, irritation of the lungs or burden on the heart would be fatal. For this reason its use is indicated in cesarean section for premature separation of the normally implanted placenta, cesarean section in the presence of poorly compensated heart disease, and pulmonary disease. It may also be employed to advantage in the vaginal delivery in cases complicated with heart or pulmonary conditions—morphine analgesia during labor and free infiltration of the perineum at delivery permitting of spontaneous delivery, episiotomy, immediate repair and even low forceps. Gellhorn [2] has so advocated its use for many years.

In all these conditions the surgeon has the pleasure generally of seeing his patient leave the operating room in as good condition as she enters it. If an obstetrician learns to use local anesthesia it will stand him in good stead on many an occasion. Five-tenths per cent solution should be employed and it should be injected freely. The method is not sufficiently analgesic for routine use, but it fits the situation perfectly in many complications.

THE BARBITURATES

My records reveal that in six of the eleven deaths in which pentobarbital sodium was used death was attributable to the analgesia—quite evidently in two and quite probably in the other four. In two additional instances the choice of the analgesic method, in view of the patient's pulmonary condition, seemed singularly bad. In the eight instances of amytal administration there were two in which the analgesia was quite possibly the cause of death and two in which the selection of the method seemed injudicious.

While it is difficult to say certainly that the analgesic method was responsible for the fatalities, the evidence is preponderantly in that direction. The suspected cases had these points in common: there was no other factor of enough significance to account for fatality; all the patients succumbed with a peculiar type of cyanosis and respiratory depression, rapid thready pulse and shock without hemorrhage that failed to react to the usual methods of treatment. In several instances the deaths were ascribed to heart failure or to pulmonary embolism. If this was the true diagnosis, it is peculiar that so many instances should have occurred in the barbituric acid group. Of the frequently made diagnosis "pulmonary embolism," Kerr says: "There is little doubt that a considerable number of deaths are attributed to pulmonary embolism which should really be relegated to trauma or shock or both. The diagnosis of embolus is a simple explanation and salves the conscience of the person in attendance."

The barbiturates are presumed to have a fairly wide margin of therapeutic safety. This is said to be the case particularly of pentobarbital sodium.[3] The reports of Irving [1] and of Galloway [1] and Daichman [1] reveal no maternal anesthetic death. There seems, however, to be a wide range of susceptibility to the action of the drug. For instance, Galloway describes one case in which 22 grains (1.4 Gm.) of pentobarbital sodium was administered in the course of labor without any apparent effect, and the patient at the conclusion stated that she thought she had had a very hard time. On the other hand, Willcox [4] emphasizes the importance of peculiar susceptibility to the drug and states that he has seen a number of cases in which sudden collapse, respiratory depression and death from bronchopneumonia occurred when only 3 grains (0.2 Gm.) was administered. He particularly opposes the use of the drug as a preparatory or basal anesthetic.

The symptoms of acute poisoning with the drug, as set forth by Sollmann, are coma, marked fall in blood pressure, depression or even paralysis of respiration, fall in temperature, asphyxial convulsions and failure of response to the stimulants indicated. Apparently the same symptoms occur from a smaller dose of the drug in the patient who has an idiosyncrasy to it.

For their effectiveness in labor the barbiturates depend on the capability to produce forgetfulness (amnesia) and very little on analgesic effect. Their

2. Gellhorn, George: The Advantages of Local Anesthesia in Gynecology and Obstetrics, J. Missouri M. A. **32**: 143-145 (April) 1935.

3. Sollmann, Torald: Barbituric Acid Derivatives, in A Manual of Pharmacology, Philadelphia, W. B. Saunders Company, 1932, pp. 769-780.

4. Willcox, William: The Uses and Dangers of Hypnotic Drugs Other than Alkaloids, Brit. M. J. **1**: 415-418 (March 10) 1934.

action in the former direction is greatly enhanced by the addition of scopolamine. The patient may scream as if in great agony during the course of her labor pains but wake the morning after with no clear recollection of what has taken place. In his analysis of obstetric analgesias, Irving states that he considers no method successful which gives less than 100 per cent amnesia. The factor of relief from pain he considers a minor consideration.

The drugs apparently do not inhibit uterine contractions. Labor continues after the administration of the capsules and seems undelayed. In some instances the pains appear to become more tumultuous and delivery is hastened. While some cases of postpartum hemorrhage have been reported, their occurrence may be coincidental.

The advocates of the method assert that their drug supplants morphine, having none of its disadvantages and many advantages. They state that it does not delay labor, does not narcotize the baby and makes the patient forget the unpleasant experience of childbearing. Several maintain that morphine has no further place in obstetric practice because of its ill effect on fetal respiration.

A great disadvantage of the barbiturates is the restlessness that they produce. Patients under their influence may prove difficult to control. In such a confused and semistuporous state of mind, pain arising from the uterine contractions is misinterpreted and the parturient becomes confused. As the time for actual delivery approaches, the patient may become uncontrollable. Careful surgical preparation and spontaneous delivery under such circumstances is impossible. Usually the patient must be anesthetized with gas or ether and delivery consummated by low or mid forceps. The labor over and the pains dispatched, the patient falls into a deep slumber and remains almost comatose for a number of hours.

The most enthusiastic users of the pentobarbital sodium-scopolamine technic acknowledge that the rate of operative intervention is thereby multiplied many times, that forceps delivery becomes essential in from 40 to 60 per cent of cases. They also emphasize that patients under the influence of pentobarbital sodium must be watched with the closest attention, their care individualized and precautions taken that no injuries occur during the most restless periods. For this reason the method is available for use only in the hospital and can only be a source of grief if undertaken in the home.

Considering these facts, one questions whether pentobarbital sodium-scopolamine amnesia fulfils the requirement of safety. If the patient is in constant danger of injuring or contaminating herself, if her cooperation in the course of labor is utterly lost, if the incidence of operative intervention is multiplied tenfold, if the supervision of the case is transformed from an intelligent conduct of labor into the treatment of drug confusion, one doubts that the effect is worth the reaction that it produces.

Furthermore, a grave danger is added to the situation if labor must be terminated by difficult abdominal or vaginal delivery. The margin of safety in deep barbituric sedation is small, and it may be entirely consumed by further inhalation anesthesia, by obstetric shock or by even a limited amount of postpartum hemorrhage.

It is doubtful whether the barbiturate derivatives will replace morphine, for there is no drug that is more quieting, more restful and more efficacious than the latter in long labor. This fact is recognized in a recent paper [1a] in which the author advises the administration of morphine as an antidote to the restlessness induced by the barbiturates.

COMMENT

In reviewing the intrapartum deaths from which these statistics were drawn, one is impressed with the fact that the accoucheur seemed often so bent on getting his patient asleep or her baby delivered that he gave little thought to the outcome of his hasty procedures. When the birth of the child was accomplished he was abruptly confronted with the results. The lacerations gaped, the uterus relaxed, the patient's blood began to flow. The analgesic agent that gave such profound rest narcotized the baby; the material that was to bring the mother forgetfulness of her experience combined with third stage bleeding to produce obstetric shock; the anesthetic that made operative delivery convenient relaxed the uterus and caused postpartum hemorrhage. The situation called for real generalship and, unless it was forthcoming, fatality followed.

Thus does the seamy side of obstetric analgesia present itself. He who employs such methods of deep amnesia and deep analgesia will have it to face and must be prepared to cope with the emergencies it produces. The advocates of certain drugs will complain that the description is overdrawn, yet it is the precise story that appears again and again in the case histories.

What answer then shall be given to the new patient who wants first to know whether the pangs of labor will be eliminated?

First, that one fully sympathizes with her desire for relief and is familiar with, and uses in every labor various methods of attaining that end.

Second, that with due regard for her safety and the success of analgesia one prefers to select at the time of labor the drugs which seem best adapted to the condition present and the type of pain; that what is best for Mrs. Smith is not always best for Mrs. Jones.

Third, that one considers her safety and the safety of her child as paramount issues and that with these thoughts uppermost she will be attended closely during the critical period of labor.

With these assurances in mind and with confidence in her physician, the normal patient will approach her time of delivery with equanimity, accept a moderate and safe degree of analgesia, be comforted by the watchful attendance of her physician, and pass through her delivery in better condition than the mother who is drugged to an unconscious state and whose labor becomes a blank chapter in her life.

SUMMARY

1. Analysis of maternal deaths in Philadelphia for a five year period reveals an improvement in all forms of obstetric practice except that which has to do with the intrapartum period.

2. The physician's share in responsibility for sudden fatality in and after labor has increased a hundred per cent.

3. Methods of obstetric amnesia, analgesia and anesthesia have been considered as possible factors in this unfortunate increase.

4. On the basis of records of death, spinal anesthesia has been condemned as a method of practice, and the barbituric acid derivatives have been found not as free of danger as many reports would indicate.

1930 Chestnut Street.

PIRQUET CUBICLES FOR INFANTS

BELA SCHICK, M.D.
AND
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In planning new children's hospitals we have all tried to replace the old large general ward by small rooms accommodating not more than from one to three children. Glass partitions are generally used between cubicles, so that the children may be easily watched by the centrally located nurse.

In 1928 Pirquet [1] described a new kind of isolation bed for new-born babies and young infants. At first Pirquet constructed a single bed separated from the ward by high glass walls instead of the usual railing. This glass wall could be lifted on one side like a window. Such a single isolated bed functioned very satisfactorily, but it was too expensive. Pirquet later modified his idea and built a combined unit of six small beds separated from one another by high glass walls.

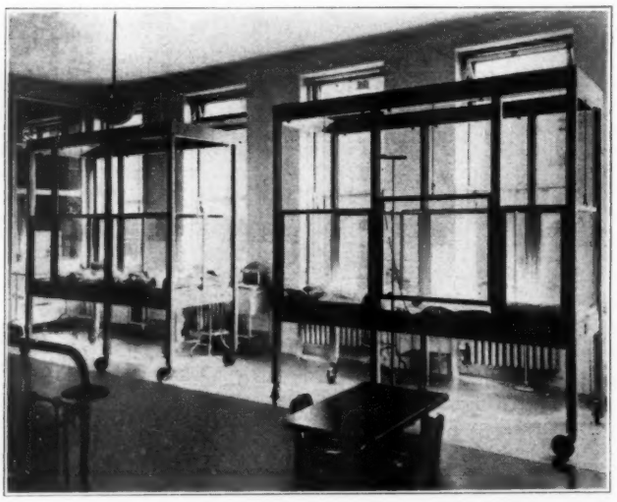

Fig. 1.—Pirquet cubicles.

Each of these bed cubicles could be opened by lifting the "window" (one of the walls) along its frame. This cubicle unit has been in use in the Children's Clinic of Vienna for the past eight years, and the results have been satisfactory.

In the Children's Pavilion at Mount Sinai Hospital we were confronted with the problem of having inadequate isolation for about half of the beds in the ward for infants and children under 3 years of age. After the isolated beds were occupied, infants brought in for admission had to be turned away because of inadequate isolation facilities, even though there may have been empty beds at the time. The expense of building large cubicles was temporarily prohibitive. We therefore wanted to install cubicle units such as described by Pirquet, thus hoping to increase our capacity for young infants and give greater protection to these infants than had hitherto been done against cross infections.[2]

We decided to have two units of five beds each, which could be attached end to end to form a single unit of ten beds. Both units were mounted on wheels with a diameter of 15 cm. so that they might easily be moved about. This is particularly desirable because the unit can be rolled to the outdoor porches. The total height of the unit is 180 cm. (fig. 1). Each bed measures 100 by 50 cm. The height of the window is 80 cm. These dimensions were selected in order to facilitate the management of the child by nurse or physician, whether standing or sitting. Each little cubicle has a wire spring on which rests a small mattress covered with a sheet. The mattress is set in at a distance of 75 cm. from the ground. There is a little pillow and, if necessary, a bed cover.

For bottle feeding the window is raised just a little, allowing the nurse, who may sit on a comfortable chair, to put her arm through the opening and hold the nursing bottle. With her other hand she can then lift the pillow and support the child's head and upper part of the body. In this way the nurse's face remains outside the cubicle, separated from the child by the glass window. This makes the wearing of masks unnecessary (fig. 2).

The cubicles are roomy enough to permit the changing of diapers and other clothing. It is for bathing only that each child has to be removed from the cubicle. During its absence the cubicle may be thoroughly cleaned, the bed made and the linen changed. The children seem to be very comfortable in their cubicles. They can look at one another and see much that is going on in the ward. They show all signs of contentment.

The cubicles permit the application of intravenous therapy. The child can be easily bandaged for fixation of the needle in the vein. The support for the container for the fluid or blood to be given is outside the cubicle, suspended on a stand. The rubber tube passes through the slightly raised window. When the child requires oxygen it can be given very easily with the oxygen tank standing outside and the funnel being connected with a rubber tube. If a larger tent is necessary it cannot be installed within the unit. A cubicle could, however, be converted into an oxygen chamber simply by having the cubicle made air tight.[3] All other manipulations necessary for therapy, such as injections and infusions, are easily performed within the tent.

The child can easily be observed by anybody without direct contact. The danger of infection from without is reduced because external contact is reduced to the short time necessary for examining and handling the child. Any person who has an infection of the upper respiratory tract is not permitted to handle the child. In case of doubt, a mask is worn or the person is prohibited from contact with the infant. The danger of healthy "carriers" still exists, but even this danger is less since contact with the infant is reduced to a minimum. Before handling the individual child, the nurse or physician must wash her (his) hands.[4]

The questions which we wished answered and which are raised by every one who sees these cubicles for the first time are whether the ventilation in the cubicles is adequate and whether the cubicles are large enough to prevent a child's cough carrying infection from one cubicle to another.

From the Department of Pediatrics, Mount Sinai Hospital.
The photographs of the cubicles were taken by Lusha Nelson and Samuel H. Gottscho.

1. Pirquet, Clemens: Ztschr. f. d. ges. Krankenhausw. **24**: 741 (Dec. 17) 1928.

2. Mr. and Mrs. A. S. Askin were interested in our need and furnished the necessary funds for these cubicles. We are indebted to them for their interest and generosity.

3. We have just converted one of the cubicles into an oxygen chamber. If necessary, several or all of the cubicles could be converted to oxygen chambers by simple additions.

4. The present status of visiting hours in our wards is very rigid. We believe that with the introduction of these cubicles it will be safe to increase the number of visiting hours, since actual contact of the parent and the patient will not take place and therefore the possibility of introduction of infection should be minimal.

Studies were made to ascertain the condition of temperature and humidity inside and outside the cubicles and to determine whether these cubicles were adequately large to avoid the spread of infection from one to the other (table 1).

These readings were made with a wet and dry bulb thermometer and the humidity was calculated from the temperature readings.

TABLE 1.—*Comparison of the Temperature and the Humidity Inside and Outside the Cubicles*

Date	Time (Hourly)	Temperature Range, F.		Humidity Range	
		Inside	Outside	Inside	Outside
8/20/35	10 a. m.- 6 p. m.	76-84	80-82	80-82	78-84
8/23/35	4 p. m.-12 p. m.	72-77	70-74	58-74	58-72
8/24/35	7 a. m.- 6 p. m.	62-74	62-72	57-69	55-69
8/25/35	7 a. m.-10 p. m.	66-74	62-72	58-62	58-62
9/ 7/35	10 a. m.-11 p. m.	68-70	57-72	68-76	62-71
9/ 8/35	10 a. m.- 3 p. m.	70-74	71-73	72-78	71-78
9/19/35	7 a. m.- 6 p. m.	72-77	70-75	66-71	62-77
9/20/35	7 a. m.- 6 p. m.	69-74	66-74	69-77	66-75
9/28/35	11 a. m.- 4 p. m.	72-74	72-73	70-88	69-96

TABLE 2.—*Conditions Represented Among the Children Admitted to the Cubicles*

Alimentary intoxication	13	Malnutrition	8
Anemia in new-born	1	Peritonitis (streptococcic)	2
Asthma	1	Pneumonia	20
Bronchitis	6	Purpura	1
Convulsions	2	Pyelitis	3
Cerebral hemorrhage	1	Pyloric stenosis	3
Congenital intestinal anomaly	1	Otitis media	4
Congenital heart	2	Sepsis	3
Congenital syphilis	1	Sepsis with streptococcic meningitis	1
Diarrhea	2	Tay-Sachs disease	1
Eczema	4	Tetany	1
Empyema	1	Thrush	1
Fever	1	Tuberculosis	1
Gastro-enteritis	7	Upper respiratory infection	7
Hepatomegaly	1	Vomiting	4
Hydrocephalus	4		

There were 17 deaths:

Alimentary intoxication	8	Hydrocephalus	2
Birth injury	1	Meningitis	1
Congenital anomaly of the intestine	1	Peritonitis	1
Congenital heart and bronchitis	1	Pneumonia	4
		Sepsis of the new-born	2
		Ulcerative colitis	1

The difference in temperature inside and outside the cubicle never was greater than 6 degrees F. and usually was from 2 to 3 degrees, the higher temperature being inside the cubicle no more often than outside.

The relative humidity usually varied from 2 to 6 per cent but reached from 10 to 12 per cent in some instances. The changes seemed to take place more slowly within the cubicles.

The differences in temperature and humidity were only slightly affected by the presence of infants in the cubicles.

EXPERIMENTS TO DETERMINE THE POSSIBILITY OF SPREADING OF INFECTION FROM ONE CUBICLE TO THE ADJACENT CUBICLES

1. The patient had bronchitis and his cough, after feeding, resulted in a spray of milk hitting the opposite wall of his cubicle as high as 4 inches from the top. A large plate placed in the adjacent cubicle failed to show any spraying after four days.

2. Culture plates were stuck 3, 8 and 12 inches from the top of the window opposite the face of a baby who was ill with nasopharyngitis and otitis media. This child was sneezing but was not coughing much. After three days none of the three culture plates showed any growth.

3. Bacillus prodigiosus cultures were spread about one cubicle, Oct. 29, 1935, and culture plates were placed in the other four and some just outside the cubicles. After from twenty-four to forty-eight hours all plates were contaminated with fungoid and bacterial growth but in none except the original plates of B. prodigiosus was this organism recovered.

4. On one occasion, Nov. 12, 1935, when three children in cubicles vomited and had fever, the same was true of several children in the ward. One nurse who was taking care of these infants had a cold. Cultures taken from the infants' throats and from this nurse revealed a very similar flora:

Nurse: Streptococcus haemolyticus beta, streptococcus viridans.

Baby A.: Streptococcus haemolyticus beta, streptococcus viridans, Staphylococcus aureus and albus and Pneumococcus III.

Baby B.: Streptococcus haemolyticus beta, streptococcus viridans, Staphylococcus aureus.

The observations made by Pirquet and those recorded in our study indicate that the temperature inside and outside the cubicle is practically the same. Apparently the chimney effect produced by the space left between the mattress and the wall of the cubicle permits sufficient exchange of air. The measurement of humidity showed equally satisfactory agreements.

The studies to determine the possibility of spread of infection seemed to point to spread by contact of the personnel with the infants rather than from one infant to another. Our statistics, we believe, bear out this impression.

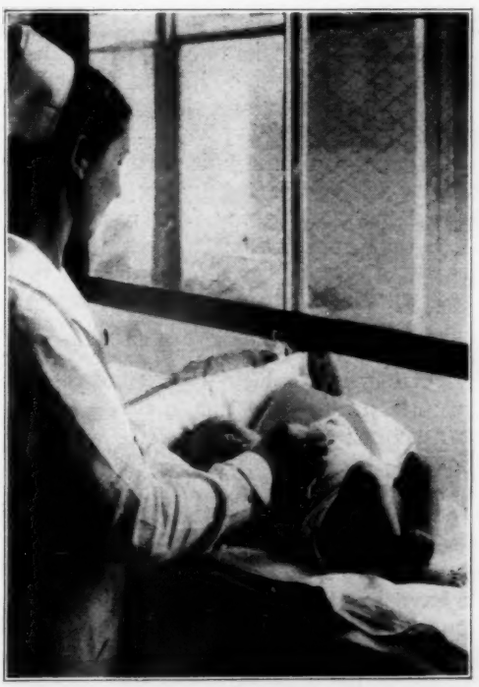

Fig. 2.—Position of nurse's face outside the window while changing the child's diaper.

Another possible question often raised is that of exposure of the infants in these cubicles to direct sunlight. The ultraviolet rays are certainly excluded by the glass partitions, although the lack of vitamin D can be and is counteracted by administration of a substitute, such as cod liver oil or viosterol. Lack of sunlight is a justifiable objection, but this is not more true of infants in these cubicles than of those in other hos-

pital rooms. We take the children out for mercury vapor lamp treatment. We expect to install an ultraviolet ray lamp which will hang from the ceiling and which can be moved to shine over any infant within these cubicles.

SURVEY OF ADMISSIONS TO CUBICLES

The total admission to cubicles has been eighty-nine cases. The average stay has been twenty days.

In twelve children fourteen attacks of acute infection of the upper respiratory tract developed during their stay in the cubicles. Two of these had two attacks, one with otitis media. Three of these occurred on the same day on which their nurse came down with a cold. In one child thrush developed ten days after admission for pneumonia. One child, admitted with pyloric stenosis, died four days later of what appeared to be aspiration pneumonia. On each of two occasions threee children developed diarrhea with fever. The attempt to trace the cause was unsuccessful.

The child who was infected with thrush was in the cubicle adjacent to a baby who had been admitted four days before with pneumonia and thrush.

The proof of the efficiency lies in the practical use of the units. It has already been proved by the results of the cubicles in the Children's Clinic in Vienna, which cover a period of eight years. Our experience is of one year's duration, during which time we admitted eighty-nine children into the cubicles with an average stay of about twenty days. In twelve children fourteen attacks of infection of the upper respiratory tract developed (two had two attacks). In three instances the attacks were traced to a nurse who came down with a cold at the same time. It is of special interest that otitis media developed in only three children in spite of the fact that thirty-five children had been admitted with respiratory infections, including four cases of otitis media.

The installation of the unit permitted us to increase the bed capacity from twenty-six to thirty-two. We substituted ten cubicles for four regular size infants' beds and thus gained room for six additional infants. We intend to remove the three beds still remaining in the open ward and replace them by a new unit of six beds, again increasing our bed capacity. The new unit is therefore a decided space-saving device. The cost of manufacturing both cubicle units (ten beds) was $850. The manufacturers state that they made no profit on this transaction; cubicles of this size will therefore sell for about $1,000.[5]

We are convinced that this new cubicle system is not only suitable for general use in infants' wards but is especially fitted for the new-born wards of maternity clinics.

We have long been cognizant of the fact that the open nurseries of our most modern maternity clinics are frequently overcrowded and have little or no means of separating the children from one another. We all have frequently been disturbed by the transmission of different infectious diseases (cutaneous, respiratory and alimentary diseases) when the children were not isolated. Essentially there has been little change in the construction of nurseries. We feel strongly that this condition should and must be remedied, and we feel reasonably certain that the demonstrated isolation unit of Pirquet is a satisfactory and economical step forward in the solution of this problem.

5. Dr. Joseph Turner, director of our hospital, has diminished the size of the structure by removing much of the upper framework.

We believe that an admission or reception ward would be decidedly improved by the addition of such a unit of from three to ten cubicles, according to the requirements of the particular hospital. By the sense of privacy that it imparts, it would diminish the number of examinations by curious individuals and also avoid the unnecessary attention paid to a "cute" baby by individuals not interested in the child for any medical reason.

It is our conviction that these isolation beds are satisfactory for the purpose for which they were intended. The nurses and physicians are very much pleased with the practical handling of the units and the children. It is furthermore our recommendation that these cubicle units be tried in nurseries and reception wards.

17 East Eighty-Fourth Street—1097 Park Avenue.

BLOOD STUDIES

A REPORT OF 2,728 CASES

E. W. PERNOKIS, M.D.

CHICAGO

My purpose in this paper is to summarize the results obtained from examination of the blood of 2,728 consecutive patients reporting to the blood clinic of the Central Free Dispensary, Rush Medical College, Chicago, from April 1, 1933, to Aug. 1, 1936. During this time 93,148 new patients were admitted to all the various departments of the dispensary, and a total of 704,175 visits were made; 2,728 patients from this total number reported to the blood clinic for examination. Half of the number came because of suspected blood disorder by the attending physician, and the remainder because additional aid was desired for the diagnosis. Special mention is made of the incidence and significance of the blood examinations in the blood dyscrasias and the other disorders encountered. An effort is made to show by illustration that the average of a series of blood count values in any of the groups encountered, excepting polycythemia and leukemia, fails to accentuate and tends to minimize any blood abnormality that may exist. All the cases reporting to the clinic may be grouped for convenience into the following six large classifications:

1. Blood dyscrasias.
2. Anemia from hemorrhage not associated with blood dyscrasia.
3. Infections.
4. Miscellaneous group.
5. Abnormal blood changes without definite clinical diagnosis.
6. Normal blood values without any positive clinical diagnosis.

METHOD

A complete blood count was done on every patient reporting to the clinic. The Dare apparatus was used for routine hemoglobin determinations and the Sahli for checking abnormally low hemoglobin values. Red blood counts were done with Hayem's solution as the diluting fluid and with pipets and chamber which bore the U. S. Bureau of Standards qualifications. A hemoglobin value of 70 per cent or lower and a red cell count below 4,000,000 were considered to represent an anemia.

For white blood count determinations 4 per cent acetic acid colored with methylene blue was used as the diluting fluid, and the pipets and chamber likewise bore

the Bureau of Standards qualifications. White counts above 10,000 were termed leukocytoses while values below 4,000 were termed leukopenias. Blood films for differential counts were made both on glass slides and on cover slips which had been thoroughly cleaned with soap and water and alcohol and passed through the flame. The glass slide method was the more practical for clinic use, though cover slip preparations were made in all the more important cases. Wright's stain was used for routine staining and checks were made with Giemsa and May-Grünwald stains when abnormal blood cells were noted. Two hundred cells were counted on the first differential of all cases and on the subsequent counts of all the pathologic cases, and only 100 cells on the patients on whom no abnormality was noted on the first differential. The Goodpasture stain was used for differentiating the acute myelogenous from the acute lymphatic leukemias. The platelets were counted both by the 4 per cent citrate dilution method and the Fonio magnesium sulfate slide method. Values between 250,000 and 350,000 were considered normal.

were met in states of remission and the low ones in states of relapse. All the patients in this group had an achylia gastrica. The leukopenia during the state of relapse was definite though not marked. Lymphocytosis was not constantly found even in the state of relapse. One patient showed a marked eosinophilia of 64 per cent. The only possible cause for the eosinophilia which could be demonstrated clinically was a mild bronchitis. Search was made for animal parasites but none were found. The one characteristic in all the blood films of the pernicious anemia patients in a state of relapse was macrocytosis. Anisocytosis and poikilocytosis varied greatly. All the patients responded to liver therapy.

Purpura.—Symptomatic purpuric manifestations following acute infections, drug administration, metabolic disbalance and cardiac decompensation were the most common. There were five cases of idiopathic purpura haemorrhagica; two were in children 5 and 8 years of age. Neither of these patients had a palpable spleen but both had typical blood values. One child, in addi-

TABLE 1.—*Blood Dyscrasias*

Condition	Number		Hemoglobin	Erythrocytes	Leukocytes	Polymorphonuclears	Lymphocytes	Monocytes	Eosinophils
Pernicious anemia	80	High	120	6,060,000	18,000	85	68	12	64
		Average	73	3,872,000	6,800	59	33	5	5
		Low	12	1,050,000	2,000	18	10	1	1
Purpura	23	High	115	5,600,000	10,400	78	44	10	8
		Average	84	4,450,000	7,400	63	29	4	2.5
		Low	30	2,300,000	5,050	32	17	1	0
Hodgkin's disease	22	High	100	5,000,000	28,000	79	49	10	7
		Average	80	4,080,000	7,700	69	36	5	2.5
		Low	50	2,400,000	3,300	17	16	1	0
Polycythemia	17	High	120	8,000,000	32,000	90	44	8	7
		Average	89	7,000,000	16,000	72	20	3	2
		Low	75	5,500,000	5,100	44	10	1	0
Leukemia	16	High	98	5,800,000	700,000	86	94	23	9
		Average	65	3,820,000	121,000	40	13	4	2
		Low	24	1,350,000	6,900	5	1	0	0
Suspect pernicious anemia	15	High	92	4,870,000	13,400	72	53	5	6
		Average	69	3,970,000	7,420	67	35	2.5	1
		Low	40	3,230,000	3,250	45	18	0	0
Aplastic anemia	8	High	95	5,100,000	16,000	92	82	14	8
		Average	53	3,410,000	7,000	60	37	4	1.5
		Low	9	960,000	1,850	16	12	1	0
Chlorosis	4	High	95	5,320,000	17,000	71	65	8	6
		Average	57	4,200,000	10,000	60	32	5	2.5
		Low	40	3,490,000	6,600	31	21	3	0

The reticulocytes were counted with 1 per cent brilliant cresyl blue in absolute alcohol. The coagulation time was done with the capillary pipet and the bleeding time with the filter paper method. The color index was determined from the red count and hemoglobin values. No volume index determinations were made. The degree of anisocytosis, poikilocytosis, macrocytosis, achromia and polychromatophilia were carefully searched for on each smear and recorded in terms of pluses. The terms "lymphocytosis," "monocytosis" and "eosinophilia" were used when found above 35 per cent, 8 per cent and 5 per cent, respectively. Values for normal are those accepted by Naegele. Blood counts were done by two technicians under immediate supervision. Blood counts done by students and others are not included.

BLOOD DYSCRASIAS

There were 185 cases of blood dyscrasias, or 6.5 per cent of the total, divided as in table 1.

Pernicious Anemia.—This was the most common blood dyscrasia encountered. Average values for red cells, white cells and hemoglobin determinations fail to reveal as indicated in table 1 the individual characteristics shown on separate counts. The high values

tion to the purpura, also had epilepsy. The third patient was a girl aged 16 years with acute purpura in whom repeated blood transfusions failed to shorten the bleeding time and who died a few hours following an emergency splenectomy. The fourth patient was 19 years of age with typical blood values and symptoms that are controlled by blood transfusion and intramuscular liver extract injections. The fifth patient was 50 years of age and had had purpura for twenty years.

Hodgkin's Disease.—One third of the cases presented anemia as a late manifestation. Itching was present in one half of the cases. The only constant blood manifestation was either an absolute or a relative leukocytosis. There was no definite disproportion of the eosinophils or monocytes.

Polycythemia.—All the patients were males. The spleen was palpable in only three; 75 per cent of the patients showed peripheral vascular disease. The white blood counts were increased in fifteen of the seventeen cases. The differential count showed an increase in the polymorphonuclear neutrophil cells.

Leukemias.—Two of the sixteen cases were of the monocytic type with the diagnosis confirmed at autopsy. One patient reported to the clinic because of severe

anemia, in the aleukemic phase, and died in the hospital three weeks later with acute myelogenous leukemia. One patient with myelogenous leukemia in the aleukemic phase had cutaneous manifestations and was referred to the clinic from the skin department. One of the myelogenous leukemia patients had had a splenectomy and complained of more pain over the long bones than did the other patients. There were nine cases of chronic myelogenous leukemia and three of chronic lymphatic type. With the exception of the cases in the aleukemic phase of the disease, the white blood counts were well above the normal values for leukocytosis. The peroxidase stain, when used, gave less help in the differential diagnosis than we had been led to hope for. Vital staining with the neutral red and janus green failed to aid in the diagnosis of the acute monocytic leukemias, which prior to autopsy were considered from the clinical picture and the morphology of the cells as acute myelogenous leukemias. Anemia was present in some stage of the disease and improved with remissions and increased with relapses.

TABLE 2.—*Blood Counts in 120 Cases of Menorrhagia*

	Hemoglobin	Erythrocytes	Leukocytes	Polymorphonuclears	Lymphocytes	Monocytes	Eosinophils
High	95	5,900,000	15,000	80	48	10	7
Average	63	3,900,000	7,100	60	32	4.5	3
Low	20	2,700,000	2,700	50	19	3	1

TABLE 3.—*Varieties and Frequency of Infections*

Condition	Number
Syphilis	69
Endocervicitis	61
Bronchitis	45
Tuberculosis	40
Tonsillitis	32
Cholecystitis	28
Lymphadenopathy (undetermined etiology)	24
Infections (undetermined etiology)	22
Nasopharyngitis	20
Dental caries	20
Malaria	8
Parasites	7
Prostatitis	5
Echinococcus cyst	2
Tularemia	2
Sprue	1
	350

Suspected Pernicious Anemia.—This group was made up of fifteen patients in whom the blood examinations resembled those of pernicious anemia but the laboratory data were not completed and the diagnosis was therefore uncertain.

Aplasic Anemia.—Four of the eight cases placed in this group showed an aplasia of the bone marrow following severe persistent blood loss. All four responded to treatment. Two of the patients with aplasia of the bone marrow were old and had marked arteriosclerosis and no other demonstrable cause for the aplasia. Two patients with marked hypofunction of the bone marrow had manifestations of pituitary and thyroid dysfunction. There were not in the group any cases that could be termed essential aplastic anemia with a rapid downward course. Though there was bleeding from the gums and nose, none of the patients showed any ulcerations on the gums, palate, tongue or tonsils.

Chlorosis.—In this group there are four patients, all young, adolescent girls with very low hemoglobins, high red blood cell counts and marked achromia of the red cells. All four responded well to iron therapy. This group is of interest in view of the supposed rarity of the disease today.

ANEMIA FROM HEMORRHAGE NOT ASSOCIATED WITH BLOOD DYSCRASIAS

In the group of anemia from hemorrhage not associated with blood dyscrasia there are 208 cases, or 7.5 per cent, of the total, with the following causes and frequency: menorrhagia 120, peptic ulcer 55, bleeding hemorrhoids 24, epistaxis 8. One hundred and eighty of the 208, or 86.5 per cent, showed an anemia; the remainder appeared for examination after they had sufficiently recovered so that anemia was not demonstrable. Twenty-one cases, or 10 per cent, showed a leukocytosis, while forty-six cases, or 22 per cent, showed a lymphocytosis. Monocytosis was encountered in thirteen cases, or 6.2 per cent, and eosinophilia in seven cases, or 3.3 per cent. The failure of average counts to give a satisfactory representation of the variations shown by individuals is manifest in table 2, menorrhagia being used as an example. Since exactly similar observations were obtained with the other diseases in this group, they are not reproduced here.

This group was particularly interesting because of the close similarity between many of these patients and pernicious anemia clinically. One patient with repeated blood loss from bleeding hemorrhoids, to which he had attributed little significance, had been diagnosed as having pernicious anemia and treated accordingly for several months before he entered the clinic. Removal of the hemorrhoids and the administration of iron enabled the patient to return to his work within a month. A woman patient with marked uterine blood loss who had been eating many carrots reported to the clinic as having pernicious anemia. She had the lemon yellow color of the skin and an achylia gastrica but a typical secondary anemia blood picture. Removal of a large bleeding fibroid and elimination of the carrots from the diet caused complete recovery. In none of these cases was there any macrocytosis present on the stained smear, and the color index was below 1.

TABLE 4.—*Blood Counts in Sixty-Nine Cases of Syphilis*

	Hemoglobin	Erythrocytes	Leukocytes	Polymorphonuclears	Lymphocytes	Monocytes	Eosinophils
High	100	4,900,000	16,000	92	62	17	13
Average	63	3,816,000	7,260	59	33	5	2.5
Low	11	1,700,000	4,000	28	12	1	1

TABLE 5.—*Frequency of Disease in Miscellaneous Group*

Condition	Number
Arthritis of the various varieties	410
Cardiovascular-renal disease	191
Colitis	85
Carcinoma	71
Thyroid disease	62
Malnutrition	54
Nervous disorders	52
Pregnancy	37
Cirrhosis	20
Menopause	14
Diabetes	13
Lead poisoning	13
Dermatitis	9
Achylia gastrica	7
Senility	6
Alcoholism	2
Scleroderma	1

INFECTIONS

In the group of infections there were 350 cases, or 12.5 per cent of the total, with the varieties and frequency given in table 3. There are here included conditions which of themselves might not be classified as infections but in cases here tabulated other condi-

tions, such as fever, purulent discharge, local evidence of inflammation, supported their inclusion in this group.

When grouped according to the blood picture but without reference to the specific infection, it was found that anemia was present in 173 cases, or 50 per cent of the total, leukocytosis in ninety-two cases, or 26.3 per cent, lymphocytosis in seventy-six cases, or 21.7 per cent, monocytosis in forty-three cases, or 12.29 per cent, and eosinophilia in twelve cases, or 3.4 per cent of the total. Syphilis is taken as an example for this group for the illustration of high, average and low counts; the other diseases showing similar observations are not recorded in table 4.

From the list of diseases it is evident that the more chronic infections are more frequently seen in the clinic. About 25 per cent of the syphilitic patients were referred to the clinic because of jaundice following antisyphilitic therapy. They showed only a secondary anemia and no characteristic differential manifestations. The group of bronchitis patients did not have any noticeable eosinophilia. The tuberculous patients tended to have a leukocytosis as the outstanding blood manifestation. The intestinal parasites did not have an eosinophilia nor did the two cases of echinococcus cyst that were confirmed by operation. The two cases of tularemia showed no characteristic blood manifestations except the positive complement fixation test.

MISCELLANEOUS

The miscellaneous group constitutes the largest group and is termed miscellaneous for lack of a better term to cover the great variety of diseases that it includes. The diseases of which it consists are given in table 5 in the order of frequency.

When grouped according to the results of blood examination without reference to the specific disease, table 6 illustrates the results.

Arthritis is taken as an example for high, average and low counts from this group (table 7). Averages of all the counts in each of the other disease processes included in this classification fails, as it does in the arthritis group, to illustrate any characteristic change.

The arthritis group, which includes all the varieties, varied much in the blood counts. Many were normal, others showed a severe anemia. One point of interest is shown by the patients with hypertrophic arthritis, who had a tendency to show in the differential an increase in the lymphocytes. The patients with anemia, when treated, showed an improvement in the arthritic symptoms.

In the carcinoma group the patients with carcinoma of the stomach showed the greatest anemia and a leukocytosis. The patients with carcinoma of the esophagus and intestinal tract showed milder anemias and less leukocytosis.

Thyroid disease showed in addition to the anemia a lymphocytosis.

The anemias referred from the obstetric department were the most severe. Thirty of the thirty-seven patients had an achylia and a macrocytic type of anemia and responded to liver therapy, and seven patients had a hypochromic type of anemia which responded to iron therapy.

It is interesting to note that all the thirteen patients with lead poisoning showed increased quantities of lead in the urine, but in none of the thirteen was it possible to obtain an increased number of stippled red cells as would be expected.

ABNORMAL BLOOD CHANGES WITHOUT DEFINITE CLINICAL DIAGNOSIS

There are 152 cases, or 5.5 per cent of the total, which showed definitely abnormal blood changes but in which no definite clinical diagnosis was made. Many of these patients failed to cooperate and did not return to the clinic. The following observations were demonstrated:

Anemia found in eighty-four cases, or 55.2 per cent
Leukocytosis in thirteen cases, or 8.5 per cent
Lymphocytosis in fifty-four cases, or 35.5 per cent
Monocytosis in ten cases, or 6.5 per cent
Eosinophilia in eight cases, or 5.2 per cent

NORMAL BLOOD VALUES WITHOUT ANY POSITIVE CLINICAL DIAGNOSIS

There are in the sixth group 786 cases, or 28.5 per cent, in which no definite blood changes were demonstrated and no clinical disease found. Many of these patients came during the height of the depression with many nervous complaints. They were making an effort to acquire more food and coal and expected the doctor to aid them. Many of the blood counts on these patients were done as a routine to eliminate any underlying pathologic condition before the patient was dismissed from the clinic.

TABLE 6.—*Results of Blood Examination in the Miscellaneous Group*

	Cases	Per Cent
Anemia	531	50.71
Leukocytosis	237	21.7
Lymphocytosis	236	22.5
Monocytosis	57	5.4
Eosinophilia	14	1.3

TABLE 7.—*Blood Counts in Arthritis*

	Hemoglobin	Erythrocytes	Leukocytes	Polymorphonuclears	Lymphocytes	Monocytes	Eosinophils
High	100	5,000,000	12,500	87	58	16	14
Average	72	4,200,000	7,800	57	36	3.7	3
Low	24	2,650,000	3,500	26	12	1	1

SUMMARY

1. Two thousand seven hundred and twenty-eight cases reported to the blood clinic of the Central Free Dispensary of Rush Medical College, Chicago, during an interval of forty months from April 1, 1933, to Aug. 1, 1936. During this interval 704,175 visits were made to all the various departments of the dispensary.

2. The cases are divided into the following groups:

Blood dyscrasias 185, or 6.5 per cent.
Anemias from hemorrhage 208, or 7.5 per cent.
Infections 350, or 12.5 per cent.
Systemic diseases 1,047, or 38.5 per cent.
Blood changes with undetermined clinical diagnoses 152, or 5.5 per cent.
Normal blood without definite clinical diagnosis 786, or 28.5 per cent.

3. Six and five-tenths per cent of the total number of patients who reported to the clinic showed blood dyscrasias, while the others were sent there by the physician in charge to get aid in making the diagnosis in question.

4. Fifty per cent of the cases with infections and general systemic diseases showed an anemia, while 25 per cent of each group showed a leukocytosis. Lym-

phocytosis was present in 20 per cent of the infections and 25 per cent of the systemic diseases. The monocytes were increased in 12 per cent of the infections and 5 per cent of the systemic diseases, while the eosinophils were increased in 3.4 per cent of the infections and 1.3 per cent of the systemic diseases.

5. There were no cases of agranulocytic angina or acute infectious mononucleosis in the collection.

6. In none of the 100 cases of arthritis in which aminopyrine and phenobarbital had been administered was there a case of leukopenia noted.

7. Averages of the blood counts and differential values in the various groups fail to demonstrate the individual differences seen in separate counts.

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DISSECTING ANEURYSM OF THE AORTA

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It is a rather striking paradox that the most dramatic of all vascular accidents is seldom recognized ante mortem. There have been almost 500 cases dealing with rupture of the aorta reported in the literature, and in only nine [1] instances has a correct antemortem diagnosis been made. Swaine,[1a] Mager,[2] Davy and Gates,[3] Hirschboeck and Boman,[4] Moosberger,[5] Vaughan,[6] Kellogg and Heald,[7] White,[8] and Weiss [9] are listed as having correctly diagnosed cases. Wyss [10] is said to have diagnosed a case, but it seems from his statement that a saccular aneurysm was suspected rather than a dissecting aneurysm, as is also true in the cases of Osler [11] and Finny.[12]

We are reporting three cases in which a correct antemortem diagnosis was made, bringing the total number to twelve, which is far short of those in which a diagnosis could have been made during life. The records of three others are also given in which the diagnosis was not made, in one of which no history was obtainable. This presentation is made in an endeavor to stimulate interest and thereby raise the number of correct diagnoses to a respectable percentage of the whole.

Dissecting aneurysm of the aorta is an incomplete rupture of the aortic wall wherein the escaping fluid separates the layers of the arterial wall to a variable extent. There is usually a terminal rupture at some distant point, either externally or into the original blood channel. Rarely, spontaneous fibrosis and healing occur without a second rupture.

HISTORY

Nicholls,[13] as early as 1728 demonstrated the fact that rupture of the inner coat of the aorta could occur without rupture of the outer coat. In 1761 he described a dissecting aneurysm found at autopsy on George II, king of England. The patient died immediately after straining at stool and autopsy revealed a dissecting aneurysm which by pressure had almost occluded the pulmonary artery, causing so much back pressure that the right ventricle burst. Morgagni [14] reported a case in 1769, and in 1798 Lynn [15] published a striking account of a dissecting aneurysm occurring during labor. Laënnec [16] in 1819 is usually given credit for the term "aneurysma dissecans." The first case reported in America was by Pennock [17] in 1838. Swaine [1a] published the first correct antemortem diagnosis in 1856, and in 1863 Peacock [18] presented his classic review of eighty cases. Reports in the literature from this time forward are too numerous to mention.

INCIDENCE

In a review of the reported cases, dissecting aneurysm is most common between the ages of 40 and 70 years. Males are affected twice as frequently as females. Race does not seem to be an important feature, nor does altitude or climate. A study of autopsy statistics reveals that dissecting aneurysm is found approximately once in 500 autopsies.

CAUSATIVE FACTORS

There are two features necessarily present in almost every dissecting aneurysm. First there must be a defective aortic wall and, second, an abnormal hydrostatic pressure in the aorta. It has been demonstrated that the normal aortic wall will withstand a pressure above 1,000 mm. of mercury. Since this greatly exceeds the pressure reached even during severe hypertension, a pathologic aortic lining must be included as one of the factors. Considerable study has been carried out in this direction, and from the numerous observations that have been made it seems clear that the real causative factor lies in the media. Quite frequently intimal fissures and tears are found without any demonstrable dissections, which would tend to prove that unless the media is readily split there will be no dissecting aneurysm. The only fairly constant finding in the media has been a degenerative change, which results from sclerosis of the vasa vasorum. Whether this causes a loss in the connecting fibers between the laminae of the media has not been definitely settled.

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1. Since the preparation of this article, two excellent reviews have appeared: Osgood, E. E.; Gourley, M. F., and Baker, R. L.: Diagnosis of Dissecting Aneurysm of the Aorta, Ann. Int. Med. **19**: 1398-1411 (April) 1936. Perry, T. M.: Dissecting Aneurysms of the Aorta, Am. Heart J. **12**: 650-665 (Dec.) 1936.

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5. Moosberger, W.: Zur Symptomatologic des Aneurysma Dissecans, Schweiz. med. Wchnschr. **54**: 325-330 (April 3) 1924.

6. Vaughan, R. T., cited by Samson, P. C.: Dissecting Aneurysms of the Aorta, Including the Traumatic Type; Three Case Reports, Ann. Int. Med. **5**: 117-130 (Aug.) 1931.

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14. Morgagni, J. B.: The Seats and Causes of Diseases Investigated by Anatomy, in five books containing a great variety of dissections, with remarks, translated from the Latin by Benjamin Alexander, London, A. Milla and T. Cadell **1**: 802, 1769.

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16. Laënnec, R. T. H.: A Treatise on Mediate Auscultation, 1846, p. 761.

17. Pennock, C. W.: Case of Anomalous Aneurysm of the Aorta Resulting from Effusion of Blood Between the Laminae Composing the Middle Coat of That Vessel, Am. J. M. Sc. **23**: 2-19, 1838.

18. Peacock: Report on Cases of Dissecting Aneurysm, Tr. Path. Soc. London **14**: 87-125, 1863.

There have been several cases reported in which there was dissection in the media without any intimal rupture being demonstrated. The fluid filling the cavity was blood from ruptured vasa vasorum, but in one case reported by Whitman and Stein [19] it was "a clear lymphlike fluid." With this pathologic condition present in the media, a pressure within the aorta sufficient to break through the intima is all that is necessary to complete the process. In most cases this force is supplied by the already present hypertension supplemented by an additional rise in pressure due to exertion. This last feature is often "the straw that breaks the camel's back." Congenital hypoplastic aortas, coarctation of the aorta and syphilis are sometimes apparently causative factors, but these make up a small minority of freak cases.

CLINICAL MANIFESTATIONS

Prodromal Symptoms.—Since hypertension is so generally a factor in cases of dissecting aneurysm, it is usually possible to elicit from the patient a history of headache, vertigo, spots before the eyes, gastro-intestinal disturbances, shortness of breath and other manifestations of elevated arterial tension. The patient quite frequently has been told by a physician that he has high blood pressure. In only one case [20] have we found preexisting fear of imminent calamity.

Onset.—The onset as a rule is sudden and arresting. The patient, without warning and during exertion, suddenly experiences an agonizing, tearing pain, usually in the anterior portion of the chest, which is so severe that shock immediately follows. This pain, which feels as though something has been "torn loose inside," lasts a variable length of time, usually from ten minutes to two or three hours. It may remain localized in some part of the anterior chest wall, usually the precordium, but more often it radiates to the back in either the thoracic or the lumbar region or to the epigastrium. It is seldom referred to the arms and in those cases in which this radiation is present it is as a rule referred to the outer surface rather than to the inner. In a few cases there is no acute onset but more of a feeling of malaise, symptoms of cardiac insufficiency, occasional precordial or substernal distress; these, however, make up about 10 or 15 per cent of the total number of cases. Patients with the typical onset frequently lose consciousness for several minutes, although some remain perfectly clear mentally. Quite frequently there is a temporary loss of vision and a fear of impending death. Many become nauseated and vomit soon after the onset. Shock is usually present, with cold extremities, clammy perspiration and dyspnea, which usually lasts from twenty to thirty minutes. If the dissection by pressure blocks the subclavian or iliac arteries there is usually a feeling of numbness and weakness in the corresponding extremity with, at times, almost total temporary paralysis. If the carotid artery is involved there may be hemiplegia, convulsions and other symptoms resembling a cerebral hemorrhage.

PHYSICAL SIGNS

Examination of the patient at this time usually reveals the blood pressure above normal in spite of the other signs of shock. The heart is usually enlarged and a systolic murmur at the apex and over the aortic area is generally present. Quite frequently there is a to and fro aortic murmur suggestive of aortic insufficiency, although the peripheral signs seldom bear this out. The aortic area of dulness is usually somewhat increased. At times, over the course of the aorta, rumbling, hissing or blowing murmurs may be heard, depending on partial occlusion of the aortic lumen from pressure of the dissecting aneurysm. The lungs are usually clear except for congestion at times in the bases and quite frequently a small amount of fluid, especially in the left pleural cavity. Coolness and absence of arterial pulsation in one or more extremities are frequently present and are the most outstanding diagnostic signs. If the occlusion is only partial, the blood pressure may be unequal in corresponding arteries and there may be a blowing systolic murmur at the point of partial block. Deep pressure over the abdominal aorta may at times be quite painful if dissection is present in this vessel. When the dissection involves vessels supplying various segments of the spinal cord, there may be bizarre neurologic manifestations such as loss of reflexes, paresthesias and motor paralysis. Blockage of a carotid artery gives the neurologic picture of a widespread cerebral hemorrhage or embolism.

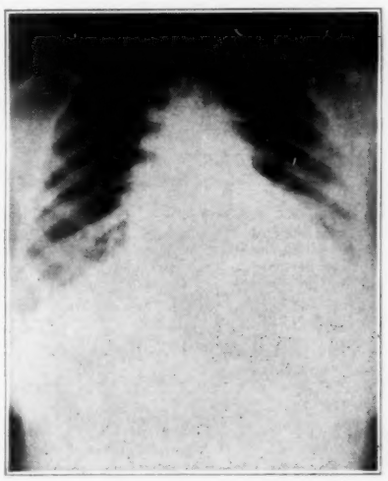

Fig. 1.—Appearance of chest in case 1, showing marked cardiac enlargement and increase in mediastinal shadow in first and second interspaces.

QUIESCENT STAGE

In a considerable majority of patients there is a stage, following the onset and preceding the terminal collapse, in which the patient is fairly comfortable. The signs of shock disappear and the pain remains only as a dull ache over the areas of radiation. At times exertion may cause a partial return of the pain but seldom to the severity experienced at the onset. In the extremities wherein arterial pulsation is absent, gangrene does not develop as would occur in true thrombosis or embolism. The extremity merely remains cool with a gradual return of sensation and motion. Owing to slow leakage through the adventitia, more and more fluid may accumulate in the chest, usually on the left side. There may be urinary or digestive complaints if vessels supplying the abdominal organs are involved in the dissection. The patient may have a low grade fever during this stage, seldom reaching 101 F., and at times a subnormal temperature may exist. The physical signs found at the onset remain fairly constant, such as murmurs over the heart and arteries, elevated blood pressure, cardiac enlargement and increase in mediastinal dulness. Occasionally during this period it may be noticed that there is venous distention due to mediastinal blockage. This stage may last from a period of minutes to several years but is usually a matter of days.

TERMINATION

Generally the curtain falls on the third and final act in this clinical drama as suddenly as it rises on the first. The patient is usually resting comfortably and makes some slight movement, such as turning in bed or raising

19. Whitman, R. G., and Stein, H. B.: A Contribution to the Pathogenesis of Dissecting Aneurysms: A Case of Dissecting Mesaortitis (Babes and Mironescu) Without Dissecting Aneurysm, J. M. Research **44**: 579-592 (Sept.) 1924.

20. Draper, W. H.: Case of Dissecting Aneurysm of the Aorta, with Plugging of the Arteria Innominata, by a Portion of the Internal Coat of the Vessel, and Rupture of the Pericardial Sac, M. Rec. **1**: 32-33, 1866.

his head, when without warning he gasps for breath or cries out with pain and falls back on his pillow and in two or three minutes is dead. This terminal collapse is evidence of rupture through the outer coat of the aorta, most frequently into the pericardium or, at times, into the left pleura. In rare cases the end comes as a slow and gradual process simulating congestive heart failure or uremia. When reentry occurs into the original lumen

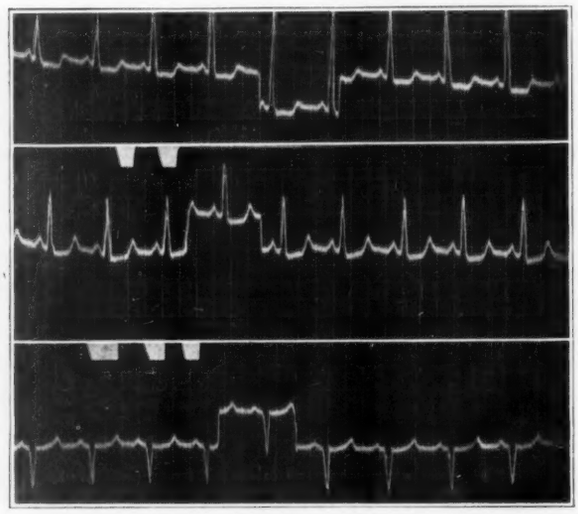

Fig. 2.—Tracing in case 1, January 10. (Figures 2-7 show serial electrocardiograms made each day the patient was in the hospital. The changes observed are probably due to disturbance of the coronary blood flow from dissection of the aneurysm about the coronary arteries.)

of the vessel with the formation of a so-called double aorta, death may not take place for years and then as a result of some intercurrent infection, trauma or other entirely unrelated causes.

LABORATORY OBSERVATIONS

The urinary changes, as a rule, are those consistent with moderate kidney damage; i. e., varying degrees of albuminuria, pyuria, hematuria and cylindruria. There is usually some anemia present, but as to how much of this is due to the dissecting aneurysm and how much is due to the associated nephritis it is yet uncertain. There is present usually a distinct leukocytosis ranging from 9,000 to 30,000 with a relative polymorphonuclear increase. Electrocardiographic studies have been made in only seventeen cases and the results have been rather inconstant; however, left axis deviation and changes in the T waves have been the most constantly observed features.

Roentgenographic features have been carefully studied by Wood, Pendergrass and Ostrum [21] with the following observations: There is usually a deformity of the supercardiac shadow, which may or may not pulsate under the fluoroscope. This deformity may be an arcuate excrescence arising from any portion of the thoracic aorta. At times a shadow may be seen along an aortic branch, and this is the most pathognomonic of all x-ray appearances. There is at times displacement of the trachea and esophagus, and at times a nonfatal leakage may be evident as a pleural effusion, usually left sided or as a mediastinal infiltration. Cardiac hypertrophy is nearly always present.

Since syphilis is a rarity in these cases, the blood Wassermann reaction is usually negative.

21. Wood, F. C.; Pendergrass, E. P., and Ostrum, H. W.: Dissecting Aneurysm of the Aorta with Special Reference to Its Roentgenographic Features, Am. J. Roentgenol. **28**: 437-465 (Oct.) 1932.

The blood chemical studies are of little value. The chemical constituents are usually within normal limits; in some patients there is a tendency toward a terminal rise of retention products, which is probably due to continued disturbance of the kidney circulation.

DIFFERENTIAL DIAGNOSIS

Coronary occlusion with cardiac infarction is the most confusing condition to differentiate. The sudden, terrific, tearing pain occurring during exertion, characteristic of dissecting aneurysm, is not encountered as a rule in coronary occlusion, in which the development of the pain is somewhat slower and is oppressive rather than rending. Shock accompanies both conditions but is more sudden in dissecting aneurysm. The site of onset of pain may be the same, although usually that in coronary occlusion is fairly low in the chest, beneath the sternum, with radiation to the neck and left inner arm, while the pain in dissecting aneurysm begins high in the chest, behind the sternum, and radiates to the back in either the thoracic or the lumbar region. A pericardial friction rub has not been observed in dissecting aneurysm. The more or less constant electrocardiographic signs in coronary occlusion have not been found in dissecting aneurysm, although changes suggestive of this are reported, as in one of our cases. Definite x-ray appearances in dissecting aneurysm would aid greatly in diagnosis, while blockage in circulation does not occur in coronary thrombosis except as a late embolic phenomenon. Pleural effusion is also very rare in coronary occlusion. Angina pectoris may be quickly discovered by its response to vasodilators, absence of shock and the like.

Saccular aneurysm should present no great difficulty, owing to its relatively insidious onset, erosion of bone and roentgenographic features, even though at times it may give definite circulatory changes. Cardiac hyper-

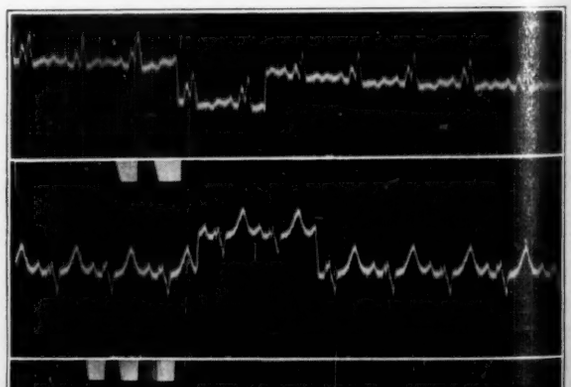

Fig. 3.—Tracing in case 1, January 11.

trophy is also rare with saccular aneurysm, and there is usually a syphilitic history or positive blood Wassermann reaction.

Cerebral hemorrhage, unless it occurs simultaneously with the dissection, can be ruled out by the absence or diminution in carotid pulsation on one or both sides or at times by spinal puncture.

Spontaneous collapse of the lung may be discovered by careful examination of the chest and the use of the x-rays.

Pulmonary embolism, with its preceding history of surgery or auricular fibrillation and its extreme and progressive shock and cyanosis, may be ruled out fairly readily.

A mediastinal new growth or abscess which may appear confusing on x-ray examination should be easily distinguished from a purely clinical standpoint as to history and examination.

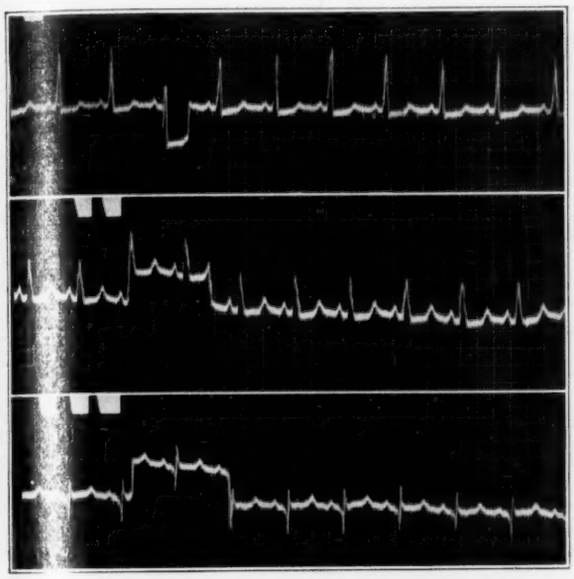

Fig. 4.—Tracing in case 1, January 12.

The acute abdominal conditions such as ruptured peptic ulcer, cholelithiasis or nephrolithiasis may at times be confusing, especially in the rare type of dissecting aneurysm in which the rupture is in the abdominal aorta. Here only a complete history and examination with especial emphasis on circulatory phenomena may be the means of arriving at a correct conclusion.

REPORT OF CASES

The following cases have not been reported in the literature prior to this time. In the first three it was possible to make a definite antemortem diagnosis, while in the other this condition was not recognized before an autopsy was performed.

CASE 1.—A. H., a Negress, aged 32, a hair dresser, seen at Emory Division of Grady Hospital, Nov. 4, 1929, complained of dimness of vision. Sluggishness of the right pupil and a positive blood Wassermann reaction were the only positive manifestations. She did not return for treatment. She was next seen March 23, 1932, complaining of smothering spells at night and irregular menses. The blood pressure was 200 systolic, 140 diastolic. The retinal vessels were moderately sclerotic, with a few hemorrhages and exudates. X-ray examination of the heart showed moderate enlargement with a normal aortic shadow. The heart sounds were normal except for slight slurring of the aortic second sound. The blood Wassermann reaction was negative. A diagnosis of malignant hypertension was made. One year later the blood pressure was 216 systolic, 140 diastolic and her general condition was much the same. She felt fairly well except for occasional headache and vertigo until Jan. 8, 1935, when at 1:30 p. m., while curling a patron's hair, she had a sudden terrific, stabbing pain beneath the lower third of the sternum. She immediately stopped working and stood motionless, but the pain persisted and seemed to spread to the epigastrium. She was then assisted to a cot and lay still in intense agony. About ten minutes after the onset she was given half a glass of warm salt water, which she vomited at once without relief. About five minutes later the intense substernal pain spread rather rapidly to the right shoulder and right groin and then involved the entire right arm and leg, and she was unable to move either of these. All this occurred within thirty minutes after the sudden onset. She arrived at the Grady Hospital at 4 o'clock still suffering intense pain beneath the sternum, in the epigastrium and in the right arm and right leg. The right arm and leg could not be moved. She was sweating profusely and complained of being unable to see. She was extremely restless. She was treated in the emergency clinic and then admitted to the medical ward.

Physical examination three hours after onset revealed the following: The blood pressure was 160 systolic, 90 diastolic in the left arm and not obtained in the right. The temperature was 99 F., the pulse 100 and the respiration rate 24. The pain had almost ceased by the time she was placed in bed. The skin was still slightly moist. She complained of being unable to see. The pupils were equal and active. The fundi showed marked retinal arterial sclerosis and a few old exudates. The right carotid artery seemed to pulsate a bit more vigorously than the left. From the subclavian artery on the right throughout the entire upper extremity no arterial pulsation could be felt, while the arteries of the left upper extremity pulsated normally. The right arm felt slightly cooler than the left. There was no palpable suprasternal pulsation. The trachea was in the midline without any tug. The chest appeared symmetrical, and expansion was fair and equal. Over the left base posteriorly there was a slight dulness, diminished whispered voice and breath sounds, and diminished tactile fremitus. Elsewhere the lungs appeared normal.

The apex beat of the heart was 11 cm. to the left of the midline in the fifth interspace. The right border was 3 cm. from the midline in the fourth interspace. The total aortic dulness was 9 cm. No shocks or thrills were present. At the apex the cardiac sounds were of fair muscular quality with a soft short blowing systolic murmur transmitted toward the base. Over the aortic area there was also heard a soft short systolic murmur transmitted slightly toward the neck. The aortic second sound was accentuated and reverberating and was followed by a questionable short diastolic blow.

The abdomen was obese and moderately tender throughout with marked tenderness in the right inguinal region. No

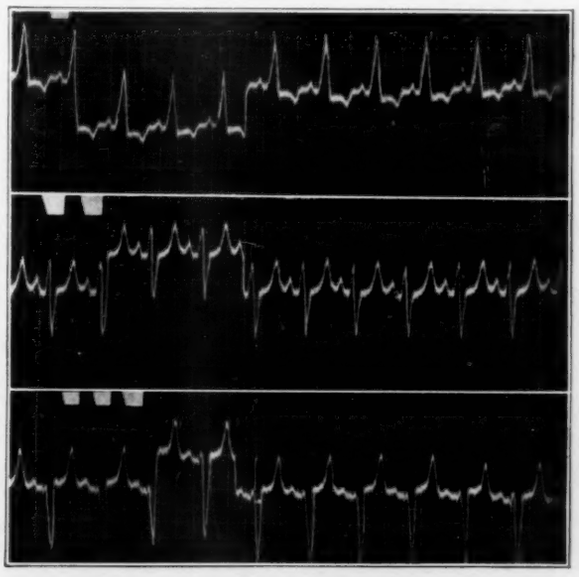

Fig. 5.—Tracing in case 1, January 13.

viscera were felt. No fluid was demonstrated. Arterial pulsation appeared normal throughout the left lower extremity but none was felt in the arteries of the right leg. The blood pressure in the left leg was 170 systolic, 110 diastolic and was not obtained in the right. The skin of the right leg was cooler than that of the left. The right arm and leg could be moved voluntarily with difficulty and appeared weak. Tactile sensation in the right arm and leg was moderately diminished. All reflexes appeared normal except the knee jerk, which was sluggish on the left and absent on the right.

A diagnosis of dissecting aneurysm was made.

For the next few days there was very little change in her condition. She complained of some indefinite epigastric pain. Within twenty-four hours after the onset her vision had returned and after the third day the right arm could be moved, but the right leg remained very weak. The temperature was about 99 F. January 14 the blood pressure in the left arm was 170 systolic, 110 diastolic; no pulsation was palpable in either

Fig. 6.—Tracing in case 1, January 14.

the right brachial, radial or femoral arteries. There was no evidence of gangrene in either extremity and the right limb was 1 degree cooler than the left. Two days later (January 16) the patient complained of feeling very hot and as though she were suffocating. Severe hiccups developed and she died rather suddenly and quietly within five minutes after their onset.

On admission the red blood cells numbered 3,910,000 and the white blood cells 12,000, with 85 per cent polymorphonuclears. The blood chemistry was normal. The urine contained a trace of albumin and numerous fine and coarsely granular casts. The spinal fluid was normal and the blood and spinal fluid Wassermann reactions were negative. January 14 the blood nonprotein nitrogen rose to 250 mg. per hundred cubic centimeters, creatinine 3.0 mg. The sedimentation rate was normal. Blood culture was sterile.

In a roentgenogram of the chest at a distance of 6 feet the heart distance from the midline to the most distant left border was 12.5 cm., the distance from the midline to the most distant right border was 5 cm., the diameter of the thorax was 26 cm., and the maximum aortic shadow was 9 cm.

Autopsy was performed twenty-four hours after death by Dr. Jack C. Norris. The body was well developed and obese; it was examined after it had been embalmed. There was no edema of the extremities, no marked distention of the abdomen and no evidence of external hemorrhage. Examination was limited to the thoracic cavity.

There were numerous fibrinous adhesions between the left lung and the chest wall; the left lung seemed partially collapsed. There was about 200 cc. of blood tinged fluid in the left pleural cavity. The upper mediastinum and about the hilus of the left lung were infiltrated with what appeared to be a partially organized blood clot.

The pericardium contained about 800 cc. of clotted blood. The heart weighed 500 Gm. The heart was definitely enlarged by hypertrophy of the left side; the left ventricular wall measuring 3 cm. in thickness and was otherwise normal.

The aorta measured 4 cm. in circumference, and several slightly elevated yellowish areas were observed that appeared to be early arteriosclerotic changes. The coronary ostia were somewhat narrowed. The wall of the aorta was thinner than normal and the adventitia was loosely connected. There was a transverse rupture about 2.5 cm. above the valve. The blood had descended through the outer third of the media and had escaped down into the pericardial cavity. The dissection involved almost the entire circumference of the aorta, from the coronary ostia throughout the entire extent of the thoracic aorta, and also involved in the same way the vessels, leaving the aortic arch.

CASE 2.—J. W., a Negro, aged 41, a truck driver, admitted to the medical service of the hospital about 7 a. m., Oct. 25, 1933, stated that he had been entirely well all his life aside from the actual childhood diseases and an occasional attack of urethritis. He arose on the morning of October 25 feeling as usual and was attempting to draw a bucket of water from the well when he suddenly felt a viselike pain beginning at the base of the neck on the right and running, with a tearing sensation, diagonally across the chest to the left nipple, and from there down the left side to the left hip. He felt weak and dizzy and broke into a cold sweat but did not lose consciousness. After sitting down for several minutes he found that the pain had become much less severe and changed to a dull ache over the area of its original radiation. Dyspnea, which appeared at the onset, became much less marked. He later walked to the house and ten or fifteen minutes later ate breakfast and started to work. He walked about two blocks, when he had a second attack of pain exactly as before and in addition his left leg suddenly became numb and gave way under him. He caught at a lamp post to keep from falling and lowered himself to a sitting position on the curbing. His pain continued to be very severe and he was carried by friends to the hospital for treatment.

Physical examination on admission revealed blood pressure of 160 systolic, 94 diastolic in both arms. The temperature was 98.6 F., the pulse 80 and the respiration rate 24. He was complaining of extreme substernal pain and was moderately dyspneic. The pupils were equal and active. The fundi showed only moderate arteriosclerosis. The head and neck were otherwise normal. Expansion of the chest was fair and equal and the lungs were clear and resonant. The cardiac impulse was 10 cm. to the left of the midline in the fifth interspace; the left border of dulness extended 11 cm. in the fifth interspace. The right border of dulness was 4 cm. in the fourth interspace and the aortic dulness in the second interspace was 9 cm. There were no shocks or thrills. The heart sounds were of fair muscular quality and there was a soft systolic murmur at

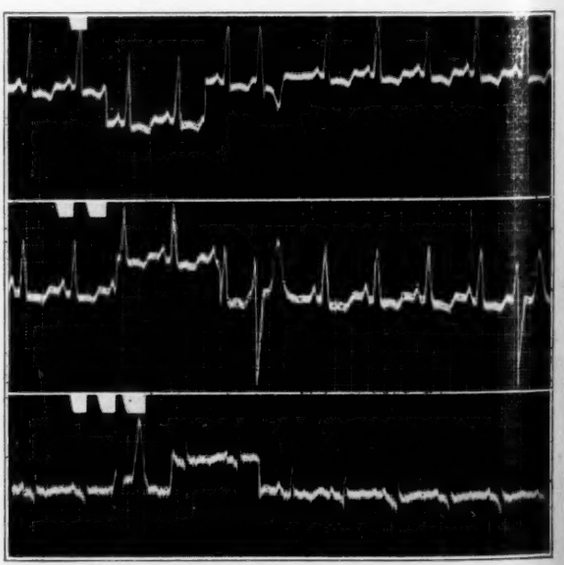

Fig. 7.—Tracing in case 1, January 15.

the apex transmitted toward the base. The aortic second sound was slightly accentuated. There was definite tenderness in the left lower abdominal quadrant but no mass, thrill or bruit could be demonstrated. There was slight weakness in both arms but the reflexes and arterial pulsations were normal, as were those of the right lower extremity. In the left leg there was a complete loss of arterial pulsation in the femoral and popliteal arteries. The skin of the left leg felt slightly cooler than that of the rest of the body but was not cold and showed no sign of gangrene. There was a loss of superficial sensation

over the foot, ankle and lower half of the left leg. Joint and muscle sense was intact. The patient was able to move his extremity only slightly. The deep reflexes were normal.

On admission the red blood cells numbered 3,920,000, hemoglobin 70 per cent, white blood cells 13,350 with 85 per cent polymorphonuclears; urinalysis revealed specific gravity 1.028 and albumin 3 plus with from 5 to 6 granular casts, from 5 to 6 pus cells, and 1 red blood cell per field. October 27 blood

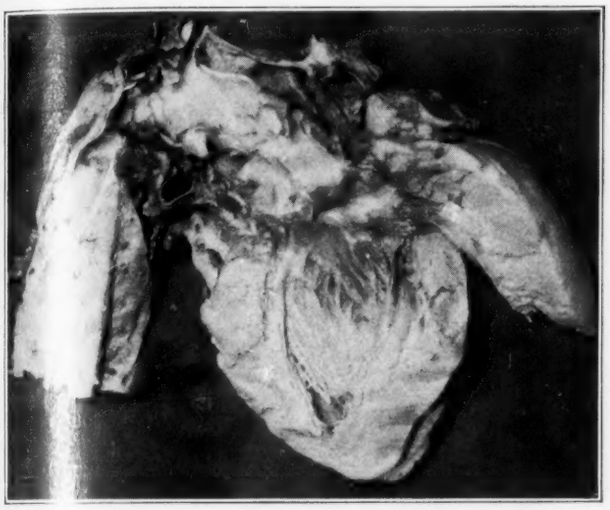

Fig. [illegible] (case 1).—Heart and aorta showing the rupture and dissection of the [illegible]urysm.

chemistry showed nonprotein nitrogen 100 and creatinine 1.8 mg. per hundred cubic centimeters. The blood Wassermann reaction was negative. An x-ray film of the chest was made with the patient in bed and revealed a peculiar diffuse widening of the upper mediastinum.

Clinical diagnosis was transverse rupture of the aorta with dissection to and blockage of the left iliac artery by a hematoma.

The temperature rose to 99.8 October 26 and to 100 October 27. The patient complained of occasional attacks of substernal pain but between the paroxysms he was fairly comfortable. The sensation and use of the left leg returned very slightly but no pulsation was observed in the arteries. The only drug given was morphine. At 1 p. m., October 27, he sat up in bed and fell back unconscious and died quietly three minutes later.

Postmortem examination by Dr. Norris revealed a small amount of uncoagulated bloody fluid in both pleural sacs. In the upper mediastinum and around the hilus of both lungs there was a moderately bloody infiltration. The pericardium contained 500 cc. of liquid and coagulated blood. The heart weighed 850 Gm. The valves were normal throughout. The aorta was markedly sclerotic. There was a transverse slit 2.5 cm. above the aortic valves. From this point the blood had dissected back toward the heart and ruptured through the remaining media and adventitia into the pericardium. The dissection distally involved from one half to two thirds of the aortic circumference but was mainly on the posterior part of the media but at times reached the adventitia. The dissection extended downward in the left iliac artery, where it formed a hematoma and almost completely occluded the lumen of the artery. A small quantity of blood had also escaped into the retroperitoneal tissue. The kidneys showed moderate chronic glomerulonephritis.

Anatomic diagnoses were (1) transverse rupture of the aorta with dissection and blockage of the left iliac artery by an intramedial clot, (2) hemopericardium and (3) generalized arteriosclerosis and chronic glomerulonephritis.

CASE 3.—W. E., a Negro, aged 39, the driver of an ice wagon, admitted to the hospital, April 28, 1926, had had measles, whooping cough and smallpox as a child. In 1915 he passed a small renal calculus; in 1918 he had influenza and in 1920 he had typhoid. He had worn glasses for several years because of poor vision but considered himself in perfect health at the onset of the present illness. At noon, April 28, as he stepped into his wagon he had a sudden attack of severe agonizing pain beneath the upper sternum, which radiated to the right lower quadrant of the abdomen. There was also some radiation to the back and to the right arm. The patient fell in the street and was unable to move for thirty minutes, even though he had been given one-fourth grain (0.016 Gm.) of morphine soon after his collapse. At the end of thirty minutes he felt much better but in attempting to rise found that his right arm and leg were numb and weak. The patient was carried to the hospital and admitted to the surgical service with a diagnosis of renal colic.

On physical examination the patient was well developed, well nourished and robust; he was lying on his back in bed, breathing rapidly and apparently in some pain. The temperature was 97 F., the pulse 60 and the respiration rate 28. The head was essentially normal except for the eyegrounds, in which there was slight haziness of both disks, with moderate sclerosis of the retinal vessels. No hemorrhages or exudates were seen. Both carotid arteries were pulsating vigorously. No venous distention or tracheal tug was present. There was a very slight systolic pulsation seen over the manubrium but it was not palpable. Expansion of the thorax was free and equal. The lungs were clear and resonant throughout except for a slight wheezy prolongation of expiration. The heart was moderately enlarged to the left. The apex impulse in the fifth interspace was 2 cm. outside the midclavicular line; the beat was forceful and thrusting in character. The retromanubial dulness was 9 cm. in the first interspace and 8 cm. in the second, more to the left than to the right. Heart sounds were clear and muscular at the apex without murmurs. Over the aortic area there was a blowing to and fro murmur, the systolic phase of which was transmitted well into the vessels of the neck. The blood pressure was 160 systolic, 80 diastolic in both arms. The left femoral artery was pulsating vigorously and there was a systolic thrill and bruit over the left inguinal region. The right femoral artery could be felt, but there was no visible or palpable pulsation; neither was there any pulsation in the other vessels of the right lower extremity, while pulsation in the vessels of the left was easily felt.

The abdomen was flat and symmetrical and held in boardlike rigidity. There was marked generalized tenderness but especially in the right lower quadrant and right inguinal region, where a soft, irregular, tender mass was felt apparently beneath the skin. No abdominal viscera were felt.

In the right lower extremity no deep reflexes were obtained and the skin was cold as far as the upper third of the thigh. No abdominal reflexes were obtained.

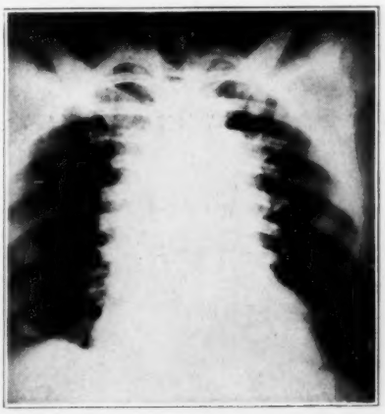

Fig. 9 (case 2).—Appearance of the chest.

The patient continued to have paroxysms of extreme pain radiating over the same areas as his original attack. A diagnosis was made of dissecting aneurysm of the aorta with compression of the right iliac artery. He had a fairly comfortable night (the temperature rose to 100) but at 12:30 p. m., April 29, he complained of sudden terrific pain in the precordium and died in three or four minutes.

The red blood cell count nine hours after admission was 2,090,000. White blood cells on admission numbered 14,140 with 86 per cent polymorphonuclears. The spinal fluid was under slightly increased pressure but was otherwise normal. X-ray films revealed the heart markedly hypertrophied transversely and obliquely. The thoracic aorta was definitely enlarged but no distinct aneurysm was seen. There was no erosion of the vertebra. The blood Wassermann reaction was negative.

Autopsy was performed six hours post mortem by Dr. Norris with the following significant observations: The pericardium was distended with freshly clotted blood, which apparently

entered through a rent in the outer coat of the aorta 0.7 cm. long located 1 cm. above the heart. The heart was moderately hypertrophied and firm. No evidence of valvular disease was found. The aorta was the site of only moderate atheroma. There was a transverse rupture of the aorta about 1 cm. above the valve cusps about 3 cm. long and rather stellate in character at one end. Dissection was carried from this point throughout the entire length of the aorta almost entirely surrounding the original lumen. The innominate, left carotid and subclavian and right iliac were also dissected as far as they were observed. Blood had escaped through the intima in the retropleural areas of the thorax and in the upper mediastinum as well as retroperitoneally in the right inguinal region. The kidneys showed a moderate chronic glomerulonephritis.

Anatomic diagnoses were (1) dissecting aneurysm of the aorta, (2) hematopericardium, (3) chronic glomerulonephritis, (4) moderate atheroma of the aorta and moderate generalized arteriosclerosis.

CASE 4.—A white man, aged 54, an executive secretary, had complained of bilious spells for the past eight years. In 1925 he had a nervous breakdown (?) and since that time he had had occasional attacks of substernal pain without radiation. July 15, 1927, he consulted Dr. R. S. Leadingham because of shortness of breath, which had been present for the past six months, as well as dry cough for six weeks and general malaise. About July 2 he had had epigastric discomfort requiring a hypodermic for relief (?). Following this attack he had an irregular low grade fever, paroxysms of coughing and moderate

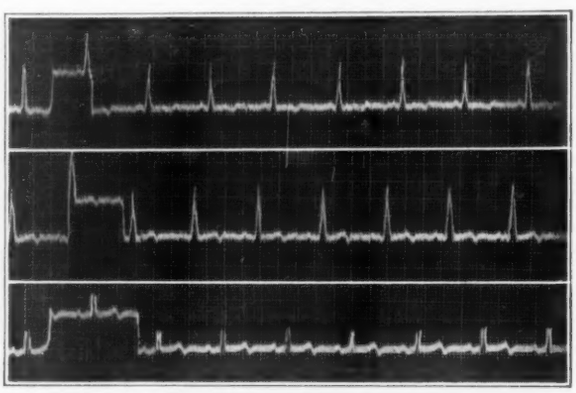

Fig. 10 (case 2).—Tracing made the second day after onset.

dyspnea but no severe pain. He improved on rest in bed but was still moderately dyspneic and "had never regained his strength."

Physical examination revealed a pulse of 96 and a blood pressure of 140 systolic, 100 diastolic. There were a few moist râles over both lung bases. The apex impulse was diffuse and weak and the left border of dulness was 13.5 cm. in the fifth interspace. There was a blowing systolic murmur at the apex transmitted slightly toward the axilla. The liver was felt two fingerbreadths below the costal margin. There were no eyeground changes. The blood Wassermann reaction was negative. Analyses of the urine revealed specific gravities of 1.015 and 1.020 with a trace of albumin. Red and white blood cell counts were normal. X-ray examination of the gastro-intestinal tract and the gallbladder gave normal results. X-ray examination of the chest revealed increased density in both bases, the heart diffusely hypertrophied and the aorta normal in size. July 18, an electrocardiogram was reported as showing left ventricular predominance and chronic myocarditis (diffuse). July 23 the patient was placed in the hospital; the blood pressure was 160 systolic, 110 diastolic and the rest of the physical examination as previously given. On rest and small doses of digitalis he improved and he was dismissed August 18, at which time the blood pressure was 138 systolic, 88 diastolic. He returned to work about September 10 and had no further trouble until the morning of October 5, when he arose feeling well and after a normal bowel movement he was seized with a sudden severe substernal pain with radiation to the epigastrium and collapsed. He did not regain consciousness. The pulse could not be felt nor could the blood pressure be obtained; only an occasional heart beat was heard. He died six hours later.

The diagnosis was coronary occlusion. Autopsy revealed the heart moderately hypertrophied. No valvular disease was seen. The myocardium was generally friable but there were no discrete areas of degeneration or of infarction. The aorta contained numerous raised patches of atheroma. At the arch there was a rupture of the intima and from this point for about 15 cm. down the thoracic aorta there was dissection, the cavity being filled with fresh blood. In the right coronary artery there was a small clot that showed beginning organization, but no myocardial change was visible distal to this.

Anatomic diagnoses were (1) dissecting aneurysm of the aorta, (2) cardiac hypertrophy and dilatation, (3) atheromatous aorta and (4) early coronary occlusion.

CASE 5.—J. S., a Negro man, apparently about 40 years of age, was admitted to the medical service in extreme shock. No history was obtained as the patient was brought in by the police, having been found unconscious. The blood pressure was not obtained. The heart sounds were barely audible. Numerous medium moist râles were present throughout both lungs. The skin was cold and clammy. The pulse rate was 48 per minute. The eyegrounds showed marked sclerosis. The urine was negative for sugar. Blood chemistry revealed: nonprotein nitrogen 100, creatinine 3.3, Wassermann reaction negative. Red blood cells numbered 3,500,000, white blood cells 11,650 with 81 per cent polymorphonuclears. A diagnosis of uremia with possible Stokes-Adams syndrome was made. The patient was given various stimulants and fluids but without results. He died quietly eight hours after admission.

On postmortem examination both lungs were found moderately congested. The pericardium was normal. The heart was firm and weighed 500 Gm. The interventricular septum showed numerous old petechial hemorrhages. The aorta showed marked arteriosclerosis. There was a transverse rupture 5 cm. in length 1.5 cm. above the aortic valve. Dissection extended along the posterior aspect of the aorta in the outer media to the third lumbar vertebra. This cavity contained old clotted blood. The intercostal arteries were torn from the original aortic lumen. There were several ulcerated areas in the upper abdominal aorta but no communication with the aneurysmal cavity in this area. There was no external rupture of the aorta. The kidneys showed subacute and chronic glomerulonephritis.

Anatomic diagnoses were: (1) rupture of the aorta with dissecting aneurysm, (2) subacute and chronic glomerulonephritis, (3) generalized arteriosclerosis with marked atheroma of the aorta and (4) chronic myocarditis.

CASE 6.—Mrs. J. B., a white woman, aged 32, was first seen Sept. 18, 1930, at which time she was admitted to the obstetric service with a diagnosis of placenta praevia. She had had four normal deliveries. She last menstruated in May 1930. She felt well until about August 1, at which time she began to have slight shortness of breath, edema of the feet and ankles, and headache. These symptoms grew progressively worse until the night before admission, when she suddenly passed about 1 pint of blood from the vagina. On admission to the hospital she was still passing an occasional dark clot. Blood pressure was 210 systolic, 150 diastolic. No fetal heart sounds were heard or movements felt. The urine contained moderate albumin and innumerable pus cells and a few red blood cells. Numerous moist râles were present over both lung bases. Labor was induced and the patient was delivered of a 3½ pound (1,588 Gm.) stillborn male. She made a rapid recovery and left the hospital September 27 in apparently good condition.

She was readmitted to the medical service November 5, complaining of cough and shortness of breath. She had had intermittent edema of the feet and ankles since her first admission and had a small hemoptysis two days prior to admission. Examination revealed râles over both bases, moderate left sided cardiac hypertrophy with a gallop rhythm, a blood pressure of 180 systolic, 120 diastolic and edema of the feet and ankles. She was put on digitalis and improved rapidly. The specific gravity of the urine was 1.011, with trace of albumin and innumerable pus cells. The basal metabolic rate was plus 19. The blood Wassermann reaction was negative. Chemistry of the blood revealed a nonprotein nitrogen of 33.3 and creatinine of 1.6; red blood cells numbered 3,490,000 with hemoglobin 60 per cent, white blood cells 10,250 with 50 per cent polymorphonuclears. The patient was discharged improved, November 12.

She was not seen again until Aug. 23, 1932, when she was admitted to the obstetric service at 9:45 p. m. She appeared to be about five months pregnant. She stated that she had felt fairly well until about August 15, when she had a cramping spell (?) and since that time had been apprehensive and had spots before her eyes, vertigo and slight shortness of breath. The left arm had felt dead for twelve hours before admission. Examination revealed numerous musical râles over both lungs. The heart seemed in fairly good condition. The blood pressure was 170 systolic, 120 diastolic. Diagnoses of preeclampsia and bronchial asthma were made. The patient seemed to be resting fairly well until about 2 a. m., August 24, at which time she complained of cramping pain in the chest and a choking sensation. She was given 1/150 grain (0.0004 Gm.) of atropine and seemed to improve slightly. At 5 o'clock she complained of a severe pain in the upper part of the back and she soon went to sleep again. At 6:55 stertorous breathing developed and she died suddenly three minutes later.

Autopsy was performed four hours later and she was found to be seven months pregnant. In the right pleural cavity there was a small amount of pinkish fluid. The pericardial cavity contained 500 cc. of partially clotted blood. The left ventricle was markedly hypertrophied. The aorta was thin, hypoplastic and moderately sclerotic; there was a transverse rupture just above the aortic valves. Dissection was confined to the base of the aorta with an external tear through the adventitia into the pericardial sac. The kidneys showed moderate chronic nephritis.

Anatomic diagnoses were: (1) hypoplastic aorta with moderate arteriosclerosis, (2) transverse rupture of the aorta with hemopericardium, (3) moderate chronic nephritis and (4) pregnancy, seventh month.

SUMMARY OF CASES REPORTED IN THE ENGLISH LITERATURE

Pannhorst [22] in 1932 found 133 cases out of 250 in which there were enough data for clinical study. These cases were mainly from the German literature. From the English literature, up to the present date, we have been able to collect 127 cases with clinical data which are presented in the following paragraphs. In a number of these cases important features were omitted, so that the review is to some extent incomplete.

In the 127 cases studied, the age was given in ninety-five. The youngest patient was 17 (Hall) and the oldest 76 years. Two died in the second decade, four in the third, twelve in the fourth, eighteen in the fifth, twenty-seven in the sixth, twenty-four in the seventh, seven in the eighth and one in the ninth.

The sex was given in ninety-three cases, sixty-nine being males and twenty-four females. The race was given in ninety-seven cases, eighty being white and seventeen Negroes.

A history of hypertension was given in sixty cases and exertion at the time of onset was mentioned in thirty-three. Pregnancy was present in six.

Pain was present in eighty cases, substernal in eleven, precordial in thirty-nine, epigastric in fifteen, between the shoulder blades in eleven, lumbar in four, and in the left shoulder in one. The character of the pain in forty-four cases was shooting in eleven, tearing in thirteen, dull in eleven, and viselike in nine. Its duration was minutes in two cases, hours in ten, days in three. Radiation was described in twenty-six cases, epigastric in nine, between the shoulder blades in six, lumbar in six, in the right shoulder in three, and in the left shoulder in two.

Shock was mentioned in forty-four cases and was present five minutes in three, fifteen minutes in four, hours in fifteen and days in one. In twelve cases there was no acute onset.

22. Pannhorst, R.: Symptomatologie und Diagnose der Aortenruptur und des Aneurysma dissecans, Deutsches Arch. f. klin. med. **175**: 115-123, 1933.

As associated symptoms there was a temporary loss of vision in eight cases, fainting in thirteen, numbness in the arms or legs in twelve and paralysis in twenty-three, of which twelve were hemiplegias. The right arm was involved in one case, the left arm in one, the right leg in four, the left leg in three, and both legs in two. There was bloody sputum in four, dyspnea in thirty, choking in three, cyanosis in six and gastro-intestinal symptoms (nausea and vomiting) in twenty-two.

Fear of impending death was present in six cases, and in one case this was observed prior to the onset of symptoms.

In forty-four cases there was a period in which the patient was relatively free from symptoms lasting hours in six, days in twenty-nine, months in five, and years in two.

Physical examination revealed fever in thirty-three cases. The pulse was slow and regular in five, slow

Fig. 11 (case 2)—Aorta showing the rupture and the beginning of the dissection.

and irregular in three, fast and regular in nineteen, fast and irregular in four. There was an increase in cardiac dulness in forty-four, with fluid at the right base in three and at the left base in seventeen. A systolic murmur was heard in fourteen, diastolic in two and a to and fro murmur in sixteen. Râles were present in the lung bases in fourteen cases. There was an absence of pulsation in the right carotid in three, left carotid in one, right radial in four, left radial in two, right leg in three, left leg in four. Pulsation was present but diminished in the right arm in three, right leg in one, and both carotids in one. Blood pressure was reported in fifty-two cases and was high in thirty-seven, low in eleven and normal in four.

The urine was studied in twenty-four cases and contained albumin in twenty-one cases, white blood cells in sixteen, casts in fifteen, red blood cells in nine; specific gravity was high in nine and low in five. The blood was examined in thirty-one cases and leukocytosis was present (9,000-31,000) in twenty-nine cases, a

normal white blood count in two, a normal red blood count in four, and anemia in five.

Electrocardiographic records were obtained in fifteen cases with left axis deviation in eight, and right in one, inverted T_1 in eight, T_2 in three, T_3 in three, myocardial disease in four, auricular fibrillation in two, extrasystoles in five, and one was normal.

X-ray examination was done in twenty-two cases and showed an increased aortic shadow in sixteen, cardiac hypertrophy in nine, pleural effusion in eight and a shadow surrounding a vessel in one.

The location of the intimal rupture was given in seventy-nine cases, ten of which were multiple. The site of rupture was the base of the aorta in forty-two cases, the arch in seventeen, the descending aorta in sixteen and the abdominal in four. Terminal rupture was described in sixty-nine cases, fifty-one of which were into the pericardium, fifteen into left pleura and one each in the right pleura, abdominal cavity and pulmonary artery. There was reentry into the aortic lumen in nine cases and one reentry into the innominate lumen.

The dissection involved only a small portion of the aorta in eleven cases, approximately half of the aorta in thirty-two cases and the entire length of the aorta in thirty-two cases. Syphilitic involvement of the aorta was present in only six cases.

This summary agrees fairly closely with the cases studied by Pannhorst except for his finding eight cases of dysphagia and four cases of extreme thirst. These manifestations were not present in our series of cases.

SUMMARY

Of six patients with dissecting aneurysm of the aorta a correct antemortem diagnosis was made in three; the diagnosis was not made in one patient who was moribund and for whom no history was obtainable on admission to the hospital; in another the diagnosis of coronary occlusion was made and in one other the patient had a complicating pregnancy and eclampsia. It is believed that more correct diagnoses can be made if particular attention is directed to a careful history of the onset and progress of the symptoms with a meticulous physical examination. The x-ray examination is of value as confirmatory evidence and the electrocardiogram may be of some help, particularly if tracings are made each day. An existing hypertension, with perhaps a sudden sharp increase in the arterial pressure, is the provoking cause of rupture in the majority of patients.

1010 Medical Arts Building.

Never Known to Be Late.—During one of his flying trips to America some years ago, as always with engagements innumerable, he took time to go from Baltimore to Boston for the single purpose of seeing a surgical friend with literary tastes who for some months had been bedfast with a decompensated heart; and James Mumford, for it was he, always said that this unannounced visit was what put him on his feet again. I knew of his doing the same thing for an Edinburgh physician of whose illness he heard by chance just as he was leaving the steamer in Liverpool. He was due for an address before the British Medical Association in Oxford, but without hesitation he took the first train to the north and managed to get back to Oxford just in time for the address, blithe and gay as though he had not spent two nights on the train. Indeed he was never known to be late and was somewhat intolerant of tardiness in others.—Cushing, Harvey: Consecratio Medici and Other Papers, Boston, Little, Brown & Co., 1928.

MYELOMALACIA WITHOUT THROMBOSIS FOLLOWING INDIRECT TRAUMA (STRAIN)

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The clinical diagnosis of acute transverse myelitis or hematomyelia is frequently made in cases of acute paraplegia or quadriplegia in which at autopsy the cord shows an extensive softening. The myelomalacia may be due to a thrombosis of the anterior spinal artery or to an occlusion of some other vessel or vessels of the spinal cord. Very often there is no microscopic evidence of inflammation or hemorrhage into the cord substance. In many cases the thrombosed vessel is found to be thickened and infiltrated with inflammatory cells, having the appearance of syphilitic arteritis. Most of these cases do not give a history of an injury. However, several cases have been reported of acute paralysis of spinal cord origin due to myelomalacia following a trivial trauma such as a strain. Ornsteen [1] stresses the fact that in diagnosing thrombosis of the anterior spinal artery the absence of direct and violent trauma to the spinal column is of great importance. He emphasizes that the nature of the trauma in thrombosis is not violence but strain, as in lifting or overexertion. Spiller [2] reports a case in which the first symptoms of paralysis developed within fifteen minutes after the patient had been lifting heavy blocks of ice. At autopsy a thrombotic softening of the cord was found which was attributed to syphilis. Grinker and Guy [3] describe a case in which a boy, aged 15 years, yawned vigorously and stretched his arms upward, outward and then backward, whereupon he suddenly felt a sharp, stinging pain in the lower part of the neck, accompanied by an audible crack. Within twenty minutes all four extremities became paralyzed. At autopsy the entire anterior half of the cord in the lower cervical region was found to be a mass of softening due to thrombosis of the anterior spinal artery. The explanation advanced by the authors is that the fifth cervical vertebra was temporarily luxated, probably compressing the anterior spinal artery, to produce a thrombus from stasis following injury to the vessel wall. We have studied the spinal cord in a case that presented a somewhat similar traumatic history but did not show thrombosis of the spinal arteries:

REPORT OF CASE

History.—A white woman, aged 31, a housewife, had never had any children, apparently because of contraceptive measures. She had always been weak physically. The past medical history was irrelevant except for an anal fistula, which had been operated on twelve years before but which had continued to drain most of the time following the operation. About four months prior to the present illness the patient fell off a porch and fractured her right elbow. This was treated successfully by her physician and then, because of complaints referable to the wrist, a fracture was discovered there also. Some time later the patient complained of considerable pain and limitation of movement in the right shoulder. An x-ray examination of

Read before the Chicago Neurological Society, March 18, 1937.
From the neuropathologic laboratory of the Menninger Clinic, Topeka, Kan.

1. Ornsteen, A. M.: Thrombosis of the Anterior Spinal Artery, Am. J. M. Sc. **181**: 654 (May) 1931.
2. Spiller, W. G., cited by Cadwalader.[5]
3. Grinker, R. R., and Guy, C. C.: Sprain of Cervical Spine Causing Thrombosis of Anterior Spinal Artery, J. A. M. A. **88**: 1140 (April 9) 1927.

that joint showed no pathologic changes. This complaint, however, persisted and was conspicuous at the time of her immediate illness. There was also slight evidence of atrophy of the small muscles of the right hand which had not been present before the fracture. The patient complained occasionally of slight pain in the interscapular region.

The afternoon of April 19, 1935, while in the yard of her home, the patient pulled herself up by her arms on to the limb of a cherry tree. The day before she had had a very slight "head cold" and some aching in the dorsal spine. While hanging from the limb of the tree she suddenly experienced the onset of numbness and tingling in the right leg. For this reason she let go of the limb and went into the house to bathe immediately, hoping to relieve the peculiar sensation in her leg. After the bath, however, numbness appeared in the left leg also and rapidly spread up the body to the chest. A physician was called at once. On examination, he found some disturbance of sensation but no motor dysfunction. Soon after he left, however, the patient began to suffer bilateral motor paralysis, beginning at the feet and ascending to the chest, until she was unable to move at all. The physician was called again and advised immediate admittance to the Stormont Hospital in Topeka. On admission she had to be catheterized, as she had not voided since the beginning of her illness. The following day one of us (L. S.) was called to see the patient in consultation.

Examination.—The patient was pale and undernourished. Respiration was entirely diaphragmatic, with occasional sighing or gasping respiratory movements. Her arms lay flexed across her chest in a characteristic "cervical cord" position. Both legs

Fig. 1.—Transverse section of most extensively involved area of myelomalacia (hematoxylin-eosin stain).

lay in complete flaccid paraplegia. The sensory level was at the eighth cervical-first dorsal segment on both sides with complete loss of sensation below this level for pain, touch, temperature, vibration and sense of position. The patient could extend her wrists slightly and flex her elbows somewhat. Flexion at the wrists and extension of the arms at the elbow were lost entirely. All movements of the fingers were lost. The reflexes in the upper extremities were hyperactive. When the triceps tendons on both sides were tapped there was a distinct paradoxical flexion of the arm. The abdominal reflexes were not obtained. The knee and ankle jerks in the right leg were slightly depressed. They were deeply depressed in the left leg. On plantar stimulation bilaterally there was an abortive tendency to normal plantar flexion. At times no response was obtained. There was a slight tendency to "equinovarus" position of the left foot. Examination of the cranial nerves gave entirely normal results. There was no gross evidence of Horner's syndrome; cocaine was not instilled. There was slight atrophy of the musculature of the right upper extremity, especially in the small muscles of the hand, and the patient complained of pain on attempted abduction of the right arm. The temperature was 100 F. by rectum; the pulse rate was 88.

Laboratory Studies: The urine was straw colored, and acid, with a specific gravity of 1.005; it was negative for albumin and sugar. Pus was present, from five to ten cells per high power field.

The Wassermann reaction of the blood was negative. Hemoglobin was 79 per cent, red blood cells numbered 3,810,000, and the white blood cells 5,500, of which 80 per cent were polymorphonuclears.

On lumbar puncture the initial pressure was 112 mm. of water; the Queckenstedt test was negative. Cell count revealed 2 lymphocytes. The Pandy test was negative. Total protein was 23 mg. per hundred cubic centimeters and sugar 80 mg. The Wassermann reaction was negative and the colloidal gold test showed all zeros.

X-ray examination of the cervical and dorsal spine showed no evidence of fracture, dislocation, caries or narrowing of the intervertebral spaces.

Course.—The patient was bedridden. During the acute phase her temperature rose to 100.2 or 100.4 F. by rectum each day.

Fig. 2.—Transverse section of lower cervical region of the cord (hematoxylin-eosin stain).

After a few days it did not rise higher than 100 during the period in which she was under observation. Retention of urine persisted and bowel incontinence developed. The sensory level descended gradually to the third dorsal segment. Slight spasticity appeared in the lower extremities. After a few days slight flexion movements of the wrist, extension movements of the elbows and slight flexion movements of the fingers began to appear. Atrophy of the interossei and of other small muscles of the hands developed gradually and symmetrically, however, despite the slight improvement in muscular power. Some respiratory movements of the chest became possible with considerable voluntary effort.

The patient was subjected to lumbar puncture five times following the first puncture, which has already been reported. On puncture two days after the first trial only a few cubic centimeters of clear fluid appeared very slowly. Trauma was not evident in this puncture, but numerous red blood cells were found on microscopic examination. On the day following this a homogeneous bloody fluid was obtained. Two days later, or five days after the initial lumbar puncture, despite the employment of a medium sized needle, manometric pressure was so low that no reading could be obtained. The fluid, however, was clear. On simultaneous bilateral compression of the jugular veins, some rise in the column of fluid occurred but was not sufficient to permit a reading. Three days later the initial pressure was 70. On several attempts no rise in the column of fluid could be obtained with jugular pressure. On one occasion

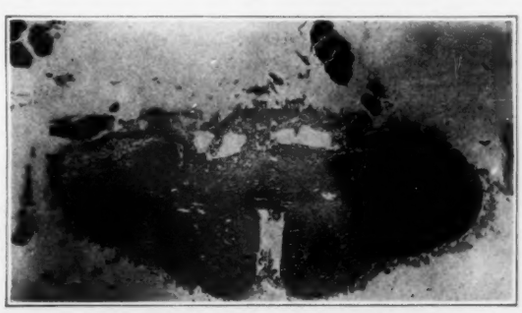

Fig. 3.—Transverse section of upper thoracic region of the cord (hematoxylin-eosin stain).

it rose slowly to 175 mm. (of water) and then fell promptly on release. Three months later (after the patient had been discharged to her home) the fluid was clear. The initial pressure was 50 mm. (of water). On firm jugular pressure the reading was 235; on light bilateral jugular pressure it was 150; on abdominal pressure the reading was 100. The rise and fall to normal in each instance occurred well within ten seconds. The cell count was 5, the Pandy reaction was negative, and the total protein was 37. The patient was seen by us on a few occasions at her home. Progressively severe sacral decubitus developed and she died ten months after the onset of her acute illness.

Clinical Diagnosis.—From the clinical picture and the course presented by the patient while under our observation two possible diagnoses were given principal consideration: (1) acute ascending myelitis of virus type (?), possibly associated with (inflammatory) hemorrhage; (2) hematomyelia, principally of the cervical enlargement and precipitated by trauma (strain). With this possibility was considered the fact that the bleeding might have occurred in a previously present defect; for instance, a small syrinx. In favor of this concept were the following facts: (1) the anamnestic suggestion that the fractures may have had a neurogenic dystrophic basis, (2) the unexplained arthropathy of the shoulder, and (3) the presence of atrophies, antecedent to the final illness, without other characteristic symptoms (sensory changes, for instance) of a peripheral nerve lesion. It is also noteworthy that the atrophy occurring on the opposite side, following the acute illness, soon became quite symmetrical with the original atrophy.

While continued compression of the cord by any of the elements of the vertebral column could be ruled out by x-ray studies, the possibility of a transitory crush of the cord could never be entirely excluded. On this basis the possibility of ischemic softening of the cord was considered in this case.

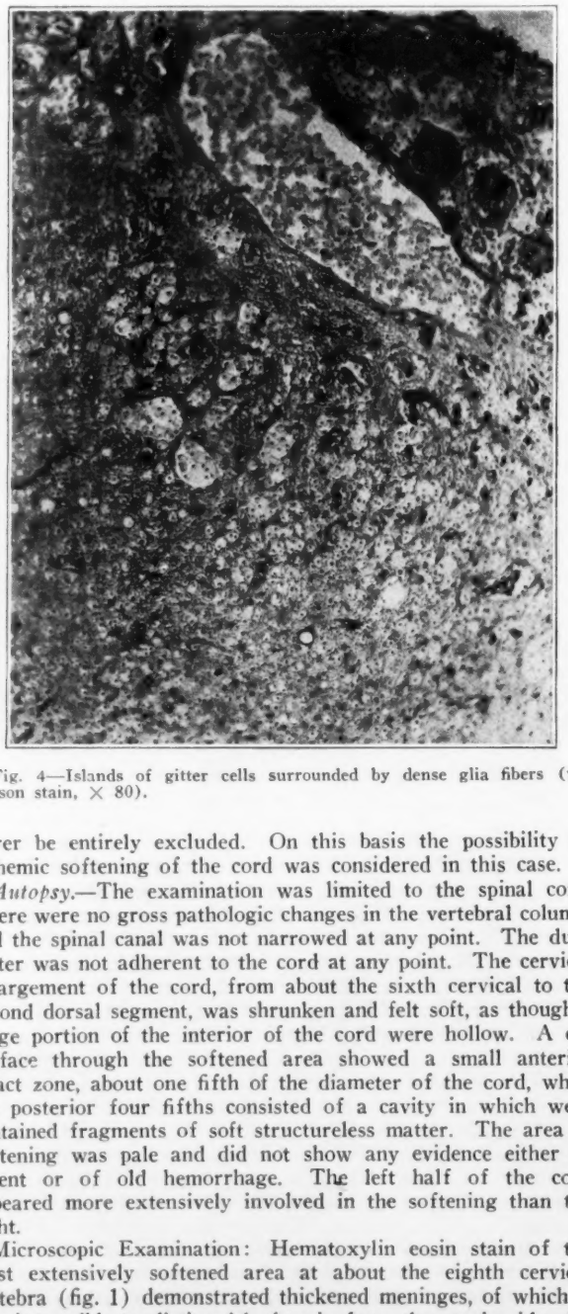

Fig. 4—Islands of gitter cells surrounded by dense glia fibers (van Gieson stain, × 80).

Autopsy.—The examination was limited to the spinal cord. There were no gross pathologic changes in the vertebral column, and the spinal canal was not narrowed at any point. The dura mater was not adherent to the cord at any point. The cervical enlargement of the cord, from about the sixth cervical to the second dorsal segment, was shrunken and felt soft, as though a large portion of the interior of the cord were hollow. A cut surface through the softened area showed a small anterior intact zone, about one fifth of the diameter of the cord, while the posterior four fifths consisted of a cavity in which were contained fragments of soft structureless matter. The area of softening was pale and did not show any evidence either of recent or of old hemorrhage. The left half of the cord appeared more extensively involved in the softening than the right.

Microscopic Examination: Hematoxylin eosin stain of the most extensively softened area at about the eighth cervical vertebra (fig. 1) demonstrated thickened meninges, of which it was impossible to distinguish the pia from the arachnoid. All that remained of the cord substance was a narrow peripheral zone of white matter in the lateral and ventral aspects. The interior of the cord appeared as a cavity containing numerous isolated fragments of nerve fibers, normal blood vessels and gitter cells. The cavity was bounded anteriorly and laterally by gitter cells and an increased number of small vessels and dorsally by the meninges and some gitter cells. There was no evidence of thrombosis in any of the vessels, none of which contained blood corpuscles. There was a fairly clear demarcation between the intact tissue and the softening, consisting of slightly denser glia tissue, as though some attempt had been made at repair. In the periphery of the destroyed tissue there was an occasional small perivascular collection of lymphocytes, which were reactive to the severe destructive process.

In the section stained by the Spielmeyer iron-hematoxylin method for myelin sheaths, only fragments of myelin could be seen in the ventromedial periphery of the cord. Otherwise there was a complete absence of myelin sheaths. The posterior roots showed some demyelination; the anterior roots were more severely demyelinated. The gitter cells in the scarlet red stain were laden with fat.

In the upper part of the softened area, approximately at the sixth cervical segment (fig. 2), the meninges were thickened, particularly over the posterior aspect of the cord, which was somewhat collapsed. Here the meninges rested directly over the periphery of the cord, thus obliterating the subarachnoid space and gave an appearance as though the meninges had compressed that part of the cord. A few vessels in or near the posterior root showed intimal proliferation; other vessels possessed a proliferated adventitia. At this level the area of softening was less extensive than at the level shown in figure 1 and occupied the entire dorsal half of the cord in addition to a large portion of one anterior column in which the entire gray matter was destroyed. In the intact anterior horn the ganglion cells showed only moderate degeneration in the form of chromatolysis.

In the Spielmeyer stained section there were myelin fragments and some normal sheaths present in the relatively intact areas and especially in the anterior white matter. The posterior roots showed some demyelination, while the anterior roots were fairly well preserved.

In the Bielschowsky silver nitrate stain, nerve fibers, some of which were thickened and fragmented, could be seen in the areas that showed myelin in the Spielmeyer sections. Otherwise there was complete absence of axis cylinders.

The destruction of cord substance in the lower part of the softening, at about the second or third dorsal segment (fig. 3), was less extensive than at the already described levels. In the former the meninges over the dorsal part of the cord were thickened and merged with the destroyed cord tissue, thus obliterating the subarachnoid space. The softening was limited to the dorsal half of the cord, in which there were small cavities that were lined by gitter cells and glia fibers. In certain areas the gitter cells formed islands that were surrounded by dense glia fibers (fig. 4). An occasional vessel in the dorsal root showed moderate proliferation of the intima and adventitia. The anterior spinal artery was collapsed, and not a single vessel contained blood. The anterior half of the cord demonstrated severe degeneration of the anterior horn ganglion cells and degeneration of the descending tracts.

Above and below the limits of softening there was secondary degeneration of the ascending and descending tracts (fig. 5). The areas of secondary degeneration showed a moderate increase of astrocytes (Cajal gold chloride stain), which were progressive in type. In the Holzer stain for glia fibers the glia fibrosis appeared only moderate in degree.

It should be emphasized that the intimal and adventitial proliferation mentioned were both rare and slight. Neither encroached materially on the lumen of any vessel. The change was definitely of secondary or reactive type, a sequel of the myelomalacia. It should also be noted that the vessels in the regions of the cord which were not softened contained blood in contrast to those in the softened segments.

COMMENT

This case is of special interest because of (1) its definite relationship with mechanical strain and (2) the unclear and stimulating problem of its precise patho-

genesis. The strain suffered in this instance was of course not one that would ordinarily cause serious consequences, and this in itself raises the question of antecedent vascular or neural defect or concomitant infection. The postmortem conditions do not provide a basis for consideration of a specific antecedent defect, although certain clinical features (previously mentioned) suggested this strongly. We knew only that the patient was frail and anemic and that she had a chronic anal fistula.

No evidence of syphilis could be demonstrated, nor was there definite evidence of other vascular disease. There was furthermore no evidence of venous or arterial thrombosis. Venous thrombosis in myelomalacia has been emphasized by Mon-Fah Chung.[4] Arterial thrombosis, especially of the anterior spinal system, has been either demonstrated or assumed to be the cause in most cases of myelomalacia.[5] It is noteworthy that the second case of Bassoe and Hassin[6] presented massive extensive softening of the cord without evidence of thrombosis. These authors mention the possibility of virus infection as an etiologic agent. One cannot conclusively exclude such a possibility in our case, in view of the clinical course, although the late anatomic changes offer no evidence of infection. It should be stated that the myelomalacia was (objectively) of characteristic ischemic type. We cannot of course exclude with finality the possibility of ischemia due to syphilitic involvement confined to the origins of blood vessels at the aorta, as mentioned by Winkelman.[7] Toxemia of syphilis we consider an untenable concept in cases in which there is no definite clinical or postmortem evidence of syphilis.

Several authors emphasize the greater delicacy of the posterior spinal vessels as compared with the anterior spinal vessels. Zeitlin and Lichtenstein,[5] however, point out their relatively lower vulnerability on the basis of rich anastomoses. It should be pointed out that the clinical syndrome presented by this patient was not that of the anterior spinal artery alone but rather a "transverse" syndrome, and that anatomically the destruction of the posterior half of the cord is more nearly complete than that of the anterior half.

The blood supply of the spinal cord has been described and reviewed by several authors,[9] so that we may confine ourselves to the immediate applications of the anatomic facts. While there is still no agreement as to the precise details, it is generally accepted that, although the anterior spinal artery and the dorsal spinal arteries, both derived from the vertebral arteries, furnish the principal blood supply of the upper cervical cord, a change occurs at about the fifth cervical segment, so that the continuation of the anterior median artery and perhaps the dorsal spinal arteries becomes critically dependent on the reenforcement by the lateral spinal arteries (anterior and dorsal root branches). These enter through the intervertebral foramina and are described as being derived from branches of the subclavian down to the second dorsal root[10] and below that from segmental branches of the aorta.

It is noteworthy that in addition to the hazard of entry of the lateral spinal arteries by way of the intervertebral foramina, in an especially mobile portion of the spine,[11] the trunks from which these are derived pursue devious courses in the neck,[12] in which excessive compression and angulation might occur. The posture which our patient assumed was such that the whole subclavian system might be thrown out of normal alinement. We think therefore that, in a generally delicate and possibly definitely vulnerable individual (this factor uncertain), acute ischemia may have occurred on the basis of compression, angulation or even laceration of the lateral spinal arteries or their parent trunks.

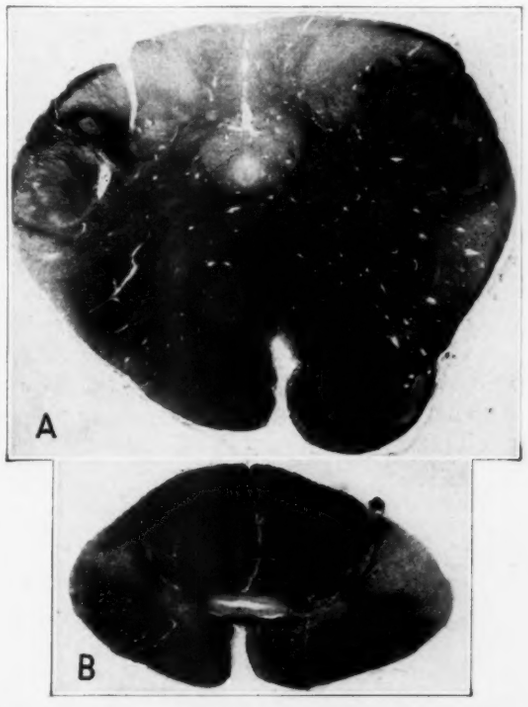

Fig. 5.—Transverse section (*A*) of lower medulla showing demyelination of ascending tracts, and (*B*) of lower thoracic region showing demyelination of descending tracts (Spielmeyer stain).

SUMMARY AND CONCLUSIONS

In a case of myelomalacia without spinal artery thrombosis and without definite spinal artery disease, symptoms began while the patient was hanging by her arms from the limb of a tree. The myelomalacia may have been precipitated by ischemia due to injury to the cervical lateral spinal arteries or their arteries of origin.

Reports of myelomalacia following slight or indirect trauma such as strain are not common. We suggest that such cases receive especially intensive clinical and anatomic study, that complete autopsies be performed when possible, and that the vascular supply of the regions affected be dissected out up to the origins of the segmental arteries. This alone would settle conclusively some of the problems involved in this subject.

133 East Fifty-Eighth Street.

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SQUAMOUS EPITHELIAL BONE CYSTS OF THE TERMINAL PHALANX

AND BENIGN SUBUNGUAL SQUAMOUS EPITHELIAL TUMOR OF THE FINGER

ARTHUR D. BISSELL, M.D.
AND
ALEXANDER BRUNSCHWIG, M.D.
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Squamous epithelial cysts in the subcutaneous tissues of the hands have been repeatedly described in the literature.[1] It is generally stated that such cysts are of traumatic origin and are due to proliferation of a small fragment of cutaneous epithelium that is carried into the deeper tissues. Wörz,[2] however, reviewed a series of fifty-five cases and was able to find in only twenty-four of them an adequate history of trauma.

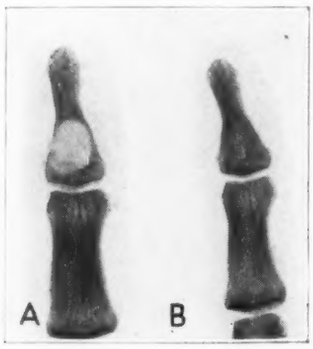

Fig. 1 (case 1).—*A*, unilocular squamous epithelial cyst in proximal half of distal phalanx. B, appearance taken eight months after operation, showing healed lesion.

That such epithelial cysts not only occur in the soft tissues but may also extensively involve the phalanges is shown by reports in the literature, summarized in the accompanying table.

To this series may be added the following two cases:

CASE 1.[3]—A girl, whose age is not given, caught her finger in a door in 1917; seven years later, in 1924, the finger presented a swelling of the terminal phalanx. A roentgenogram (fig. 1 *A*) revealed a rounded, well circumscribed, expanding cystic lesion in the proximal half of the terminal phalanx. At operation this was exposed and curetted. Histologic study of the cyst revealed a squamous epithelial lining surrounding laminated keratin. There were no hair follicles or sebaceous glands. Roentgenograms taken several months after operation showed filling in of the lesion by cancellous bone (fig. 1 *B*).

CASE 2.—A man, aged 41, admitted to the University of Chicago Clinics in May 1936, had had the nail of the left index finger torn off by a revolving fan blade ten years previously. The nail reformed and there were no symptoms until 1935, when a gradual swelling of the terminal portion of the finger developed with slight tenderness on pressure. There was no impairment of function. Roentgen examination (fig. 2) revealed an expanding cystic lesion replacing all but the base of the terminal phalanx. Operation was performed May 21, the palmar aspect of the distal phalanx being exposed through an "alligator bill" incision. A whitish cystic mass about 1.5 cm. in its longest diameter was found. This was peeled away from the thin dorsal shell and base of the phalanx; closure of the wound occurred after hemostasis, without drainage.

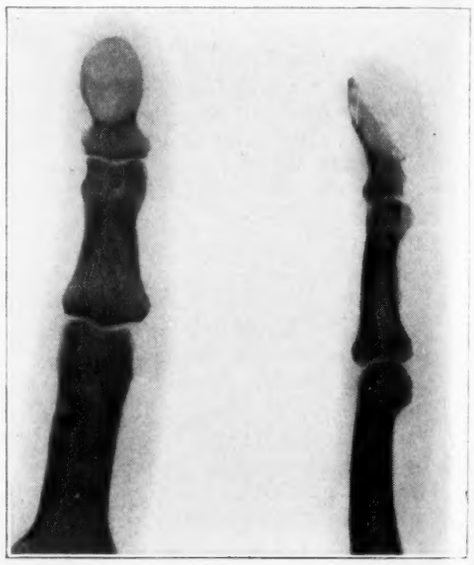

Fig. 2 (case 2).—Anteroposterior and lateral views of index finger showing squamous epithelial cyst involving distal phalanx.

From the Department of Surgery and the Division of Roentgenology of the Department of Medicine, the University of Chicago.

1. Behrens, Adolf: Ueber traumatische Epithelcysten, Virchows Arch. f. path. Anat. **250**: 145-151, 1931.
2. Wörz: Ueber traumatische Epithelcysten, Beitr. f. klin. Chir. **18**: 753, 1897.
3. Patient of Dr. James T. Case, Chicago.

Reports of Bone Cysts of the Terminal Phalanx in the Literature

Author	Age	Sex	History and Symptoms	Roentgenograms	Treatment	Histopathology
Harris, R. I.: J. Bone & Joint Surg. **12**: 647, 1930	Adult	♂	Golfer: sudden sharp pain in thumb followed by tenderness on pressure for four years; swelling of distal phalanx progressive with increased tenderness during fifth year; no definite trauma at any time	Destructive, cystic lesion of distal half of terminal phalanx	Excision of a cyst	Fibrous cyst wall lined by squamous epithelium; cyst filled with keratin
Behrens,[1] 1931.....	29	♂	Hand grenade wound in right 5th digit in 1918; complete healing; 1923 same digit struck by hammer with splintering of nail; pain and sensation of heat for 6 years; also swelling of distal phalanx	None reported	Amputation of distal phalanx of 5th digit in 1929	Squamous epithelial cyst within phalanx just beneath nail bed, producing a circumscribed area of bone destruction
Behrens,[1] 1931.....	13	♂	Gradual swelling of distal phalanx of left index finger during one year; questionable onset from slight contusion to this finger; no pain	Expanding cystic lesion involving whole of distal phalanx except for small margin at the base	Curettage ?	Cyst filled with sebaceous-like material and lined in part by squamous epithelium; where this was missing there was a layer of infiltrated fibrous tissue also containing foreign body giant cells (rupture in situ of cyst ?)
Curtis, F. E., and Owen, C. I.: J. Bone & Joint Surg. **15**: 998, 1933	29	♂	Swelling of distal phalanx left third finger 1921 accompanied by sense of heat, throbbing pain and tenderness; partial excision of a cyst in 1924 with little relief; continued swelling until 1929	Two confluent cystic lesions destroying all but the base of the distal phalanx	Excision of cysts in 1929	Cyst walls composed of fibrous tissue lined by squamous epithelium; the cysts containing sebaceous material

When the cyst was opened a viscous, whitish, syrupy fluid escaped, leaving denser flakes of sebaceous-like material adherent to the inner walls. Microscopic study of the wall showed it to be lined with a thin layer of stratified squamous epithelium. There were no hair follicles or sebaceous glands (fig. 3).

COMMENT

In four of the six cases there was a history of trauma to the distal portion of the finger in which the cysts subsequently developed. The fact that sebaceous glands and hair follicles were not observed in the lining in any case is evidence favoring the view that traumatic deep implantation of a fragment of cutaneous epithelium is a more probable etiologic factor than displaced embryonic rests, or that these tumors are dermoids.

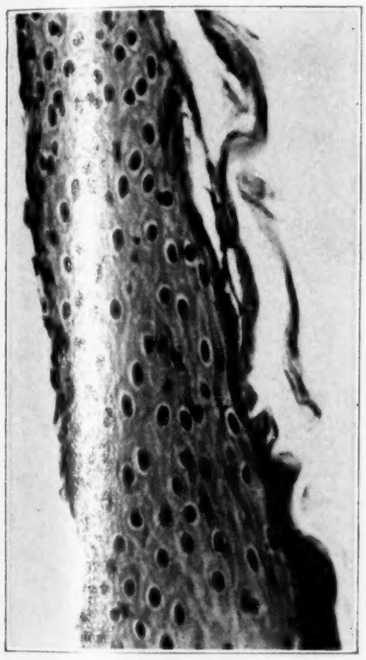

Fig. 3 (case 2).—Squamous epithelial lining of cyst in distal phalanx of index finger. Slightly reduced from a photomicrograph with a magnification of 340 diameters.

That masses of epithelium implanted in the soft tissues adjacent to bone may also invade the bone is shown by case 3:

CASE 3.—A man, aged 59, was observed in the University of Chicago Clinics in whom several months following a contusion to the distal portion of the left thumb a firm subcutaneous nodule developed, extending forward from the free margin of the thumb nail. Roentgen examination (fig. 4) showed a concave erosion of the lateral phalangeal margin. At operation a small round mass partially embedded in bone was removed, together with a thin layer of the adjacent bone. Histologic examination (fig. 5) showed the mass to be composed of squamous epithelium, the central portion of which was begining to undergo marked keratinization, with suggestion of beginning cyst formation.

This case is cited also because it may illustrate an early stage in the development of traumatic squamous epithelial cysts of bone.

Nonmalignant stratified squamous epithelium may invade bone under other circumstances: 1. The squamous epithelial lining of dentigerous cysts is the result of downgrowth of gingival mucosa along the sinuses, sometimes present between the gingival surface and the cyst cavity.[4] 2. Chronic osteomyelitic cavities in the long bones may become partially or completely lined by downgrowth of the cutaneous epithelium along the draining sinuses.[5] In tuberculosis of the calvarium, small cavities within the diploe may present an epithelial lining, also the result of downgrowth of the cutaneous epithelium of the scalp along open sinuses.[6]

4. Grawitz, P., quoted by Morehead, F. B., and Dewey, K. W.: Pathology of the Mouth, Philadelphia, W. B. Saunders Company, 1925, p. 439.

5. Brunschwig, Alexander: Epithelization of Chronic Osteomyelitic Cavities, Surg., Gynec. & Obst. **52**: 759 (March) 1931.

6. Erdheim, J.: Ueber Tuberculose des Schädel, Virchows Arch. f. path. Anat. **283**: 354, 1932.

From a review of the foregoing cases the following clinicopathologic entity may be described:

Traumatism to the distal portions of the fingers may be followed shortly or after a prolonged period by progressive, slightly or markedly tender diffuse swelling of the distal phalanx without other evidence of infection. Also, such symptoms may develop in the absence of a history of trauma. Roentgenograms reveal a central expanding cystic lesion of the terminal phalanx that has destroyed a portion or almost all of the bone. The clinical diagnosis might usually be chondroma of the phalanx, since experience has shown that these roentgenographic changes are in most instances due to such neoplasms. At operation a cyst is found that is easily peeled away from the surrounding bone. This cyst contains sebaceous material and is lined by squamous epithelium. The lesions are benign, but it is conceivable that recurrences may develop if removal is incomplete. Preoperative clinical and roentgenographic differentiation of these lesions from other processes such as solitary bone cyst, giant cell tumor or chondroma, all of which may produce a unilocular cystic lesion in the bone, is not possible.

Fig. 4 (case 3).—Terminal phalanx of thumb showing concave erosion of bone produced by a small mass of squamous epithelial cells.

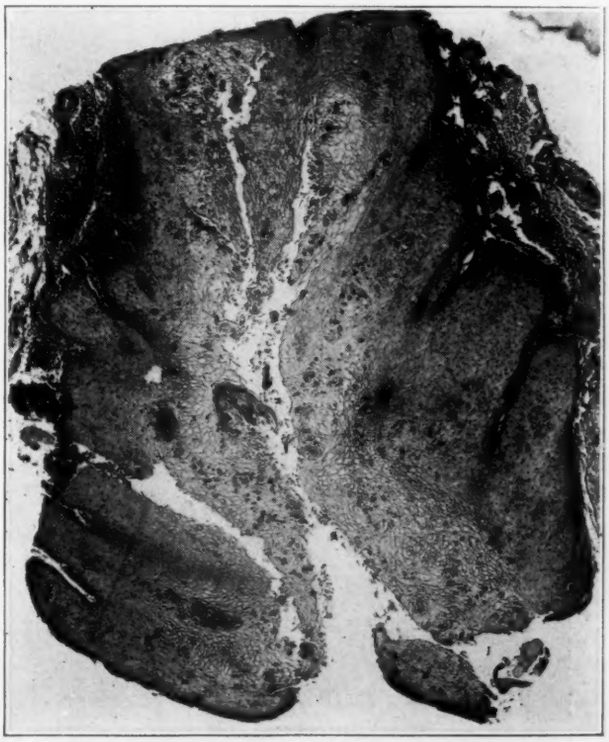

Fig. 5 (case 3).—Mass of squamous epithelial cells that produced the erosion of bone shown in figure 4. There is evidence of beginning cyst formation in the central portion of the mass. Slightly reduced from a photomicrograph with a magnification of 23 diameters.

CONCLUSIONS

Benign squamous epithelial cysts of bone, probably of traumatic origin but possibly the result of faulty development, occur in the terminal phalanges of the fingers. Their roentgenographic appearance is similar to that usually produced by chondromas. The treatment is surgical excision. This is followed by regrowth of cancellous bone to fill the defect.

As far as we have been able to determine, only four cases have been previously cited in the literature. Two additional cases are here recorded.

In addition, a case of subungual benign squamous cell "tumor" of the finger is reported in which the phalanx was secondarily eroded.

950 East Fifty-Ninth Street.

Clinical Notes, Suggestions and New Instruments

ECHINOCOCCUS CYST OF KIDNEY

JOSEPH TENENBAUM, M.D., NEW YORK

Hydatid disease of the kidney is rare in this country. Approximately thirty cases have been reported from the United States.[1] The rarity of this condition, the difficulty of diagnosis and the grave postoperative complications make this report of general interest.

REPORT OF CASE

History.—B. P., a white man, aged 31, born in Russia and raised in Buenos Aires, Argentina, has been living in New York State for the last thirteen years. Neither his parents nor he himself was ever engaged in farming or cattle raising activities. He has had no venereal disease and no serious ailments. His present complaint dates back seven years, when he began to experience pain in the right kidney region, with spells of vomiting, nausea and occasional hematuria. These attacks recurred at intervals of every few months to a year, followed by discharge of "bubbles" and shreds in the urine. He consulted me in October 1933, at which time physical examination,

Fig. 1.—Retrograde pyelogram of the right kidney.

urinalysis, roentgenography and cystoscopy failed to show any definite pathologic changes. Following cystoscopy he felt fairly comfortable until September 1935, when an extremely severe attack brought him back to the office with a specimen of urine filled with long curly shreds and bands of tissue, giving the impression of exfoliated pieces of mucous membrane. A freshly voided specimen of urine was clear and, except for a trace of albumin and a few red and white blood cells, contained no pathologic elements. Microscopic examination of the shreds previously mentioned was inconclusive. He was admitted to Beth Israel Hospital October 30.

Examination.—On physical examination he was well nourished and of an athletic physique, and presented no noticeable abnormalities. Neither kidney could be palpated, nor could pain be elicited on percussion. Repeated urinalysis failed to add any new information. The blood count revealed 4,780,000 erythrocytes, 12,000 leukocytes, 72 per cent polymorphonuclears, 28 per cent mononuclears and 1 per cent eosinophils; the hemoglobin index was 92 per cent. The Wassermann reaction of the blood was negative. On cystoscopy the bladder was found normal, and both ureters were readily catheterized. Intravenous indigo carmine returned in six minutes in good concentration from each kidney. The right renal specimen contained many pus cells, single and clumped. Pyelography (fig. 1) revealed a dilated, bifid right renal pelvis, and dilatation of the middle portion of the right ureter; the upper calices appeared irregularly diffused and shaggy and had a moth-eaten appearance suggestive of solitary cyst of the upper pole of the kidney.

In view of the uncertain diagnosis and long history of the case, operation seemed indicated, and November 2, under general anesthesia, the kidney was exposed through the extraperitoneal route. The lower pole of the kidney was easily delivered, but the upper pole merged with a dense mass with no definite line of cleavage. During manipulation the mass was torn into, and the operative field was flooded with a gush of fluid and innumerable larger and smaller cysts, characteristic of hydatid disease. After thorough suction and removal of cysts, the kidney and as much of the sac as could be secured without injury to the adjacent structures were removed, ample provision being made for drainage.

Course.—The postoperative course was extremely stormy. Within eighteen hours after operation the temperature rose to 105 F., the pulse to from 150 to 170, and the respiration rate to 36. The second postoperative day brought symptoms of deep shock with onset of extreme restlessness and labored respiration, which at times went down as low as 7 per minute. The patient remained stuporous for the next five days. The skin was covered with an eruption of the erythema multiforme type, with ulcerative lesions on the mucous membranes of the nose, mouth and pharynx. He had difficulty in swallowing for some time after regaining consciousness. Two weeks later two large abscesses developed, one on an upper and one on a lower extremity, which had to be incised and drained. The suture line broke down on the tenth day and several large cysts were drained from the lumbar wound, the largest one measuring 7 by 5 cm.; the last cyst, macerated and without the presence of scolices, was discharged about four weeks following operation. December 1 the wound was resutured, and on Jan. 2, 1936, the patient left the hospital with a small sinus draining serous fluid, which closed within three weeks. The serum precipitation test with echinococcus fluid (Ghedini) and the intradermal test (Casoni) repeated before the patient's discharge from the hospital were strongly positive.

Pathologic Examination.—The right kidney was rather large, with many adhesions attached to the capsule. The capsule, which was thickened, was pulled off with difficulty. The kidney appeared incomplete, its upper fifth being supplanted by a torn cyst. Only about one fourth of the cyst wall was preserved. The cyst wall had an average thickness of 2 mm. Its inner surface had many irregular folds and groves. Its inside was mostly yellowish. The bed of the cyst in the kidney tissue appeared smooth and clean. The kidney measured 10 by 6 by 3 cm. The surface was smooth. The much distended kidney surface formed a thin-walled sac, which continued into the much distended calices. Its inside was deeply hyperemic and a thin-walled cyst 1 cm. in diameter was loosely attached to its inside. The whole specimen was fixed (fig. 2). There were a number of characteristic cysts, all of which were torn. Their original size could not be guessed. There were a number of thin-walled cysts; two of them measured 2.5 cm. in diameter, one 2 cm., one 1.5 cm., and several were smaller. They appeared mostly glassy, partly opaque and grayish from

1. Hinman, Frank: The Principles and Practice of Urology, Philadelphia, W. B. Saunders Company, 1935, p. 628.

the outside. They contained rather thin colorless fluid. There were a few torn pieces of obviously larger and more thick-walled cysts.

Microscopic Examination.—In the sediment from the contents of the smaller cysts, hooks and scolices were found. The sections from the cyst walls gave the characteristic laminated structure. Scolices were found inside the wall. The wall of the large cyst at the upper pole of the kidney consisted of

Fig. 2.— . stoperative specimen of right kidney, cyst wall and cysts.

hyaline, partly inflamed tissue. The adjoining kidney tissue was atrophic and chronically inflamed.

The diagnosis was echinococcus at the upper pole of the kidney.

COMMENT

Hydatid disease represents the larval or cystic stage of Taenia echinococcus, which in the mature stage is found in the small intestine of the dog, wolf, cat and other carnivora. In common with cattle, sheep, horses and other herbivora, man shares the function of intermediary host through ingestion of parasitic ova passed on with the feces from an infested primary host (commonly the dog). The larva liberated in the process of digestion is carried through the portal venous system to the liver (the most common location of hydatid cyst), thence less commonly to the lungs and, if not arrested before it reaches the left ventricle, it may be swept through the circulation into any other part of the body, including the cortex of the kidney. Echinococcus of the kidney is found in about 2 per cent of the cases of hydatid disease.

It takes approximately fifteen to twenty years for the development of a full-sized echinococcus cyst, and as long as there is no communication with the pelvis (closed cyst) there are no early symptoms except such as may be caused later through pressure, displacement and destruction of the kidney substance associated with hydronephrosis. In time, especially in the presence of infection, the tissues of the hydronephrotic pelvis adjacent to the sac may yield to pressure, establishing free communication for spontaneous evacuation of the cystic contents (spontaneous cure). More often, as in our case, after spilling some of its contents, the communicating rent may become sealed and the sac refilled with daughter cysts (fractional evacuation). This process may be repeated from time to time, accompanied by renal colic due to passage of the daughter cysts through the ureters and occasionally hematuria.[2] There are two other eventualities of cyst involution: one caused by the slow leakage and absorption of the echinococcus fluid, with consecutive degeneration and calcification of the cyst (a process similar to autonephrectomy in renal tuberculosis[3]), or the cyst may rupture extrarenally, spilling its contents into the perirenal space and peritoneal sac (hydatid peritonitis). There is also the danger of metastatic secondary echinococcosis "due to a rupture of a fertile simple cyst into the heart or venous system,"[4] all of which emphasize the importance of early diagnosis.

2. Young, Hugh: Practice of Urology, Philadelphia, W. B. Saunders Company **1**: 361, 1926.
3. Brown, R K. L.: Renal Hydatid Disease, J. Urol. **23**: 611-626 (June) 1930.

DIAGNOSIS

The diagnosis of renal echinococcus, especially in the earlier stages, meets with difficulty. The subjective symptoms complained of are dull pain, backache, a sense of heaviness in the upper quadrant of the abdomen and, in the fractional evacuation type, severe renal colics followed by the appearance of "grape" skins or large laminated shreds in the urine. Cystoscopy and functional tests are commonly of little diagnostic value. Plain roentgenograms of the genito-urinary tract may or may not show the presence of a large mass in the kidney region, but pyelography rarely fails to demonstrate some degree of hydronephrosis, compression or displacement, irregularity or the moth-eaten appearance of one or more calices, and in the colicky type some degree of dilatation of the ureter. Microscopic examination of the laminated membrane, the discovery of scolices in the urine, and the positive Casoni and Ghedini tests are pathognomonic for hydatid disease.

SUMMARY AND CONCLUSIONS

1. In an operative case of renal echinococcus cyst there were obscure preoperative syndromes and a grave postoperative reaction.

2. Early diagnosis is important, to guard against the possibility of grave complications arising from infection and rupture of an unrecognized cyst.

3. Of equal importance is the choice of the proper operative procedure: aspiration of half the contents of the sac, followed by injection of 10 per cent solution of formaldehyde, or absolute alcohol, marsupialization of the sac and similar measures in order to prevent the always grave and occasional fatal anaphylactic shock following absorption of hydatid fluid.

4. While with the development of the public water supply and slaughterhouse sanitation echinococcus infestation has been rare in this country, there is ground to believe that, with the development of the wool growing industry now in progress in the United States and Canada, hydatid disease will be on the increase in both these countries.

115 East Eighty-Second Street.

BILATERAL ORBITAL GRANULOMA

JOHN F. TOWNSEND, M.D., CHARLESTON, S. C.

Tumors of the optic nerve, while not extremely rare, seldom attain the size of the ones reported in this case. These, in addition, are bilateral. The three previously recorded of about the size of those here presented were diagnosed neurofibroma.

David Verner, a Negro, aged 21, admitted to the Roper Hospital Oct. 18, 1934, suffered a burn of the left eye, with no impairment of vision in 1918. The details of this accident were not given, but the patient was quite definite about the year in which it occurred and also about the dates of the stages of the progress that followed.

In 1921 the left eye "began to grow." In 1922 "growth" commenced in the right eye, and both eyes became progressively exophthalmic from that date. Loss of vision occurred in 1924 in the left eye, which was first affected. That was six years after the burn and three years after the commencement of the exophthalmos. Two years later, in 1926, the vision was lost in the right eye also; that was four years after exophthalmos began in that eye.

Up to 1926 the exophthalmos was not great, but an exact description of the size of the eyes at that time could not be obtained. Since that time, during the eight years that elapsed before he presented himself for admission, the enlargement proceeded more rapidly. Both orbits were filled with symmetrical, firm growths about the size of a small grapefruit. The eyelids, though capable of motion, could not close completely, as shown in the illustrations. The lower lids were infiltrated and firm;

4. Dew, Harold: Some Complications of Hydatid Disease, Brit. J. Surg. **18**: 275-293, (Oct.) 1930.

the veins were distended. The eyeballs were round, hard and white except where the lids did not cover them; there they were reddened. They were movable and not tender. In the pupillary areas were collections of yellowish red material.

Fig. 1.—Lateral view of patient.

The patient's nose was recessed between the bilateral growths. The hard palate was pushed down laterally, forming an inverted V, as the roof of the mouth.

There were no other abnormalities except for palpable enlargement of the cervical and epitrochlear lymph nodes, and

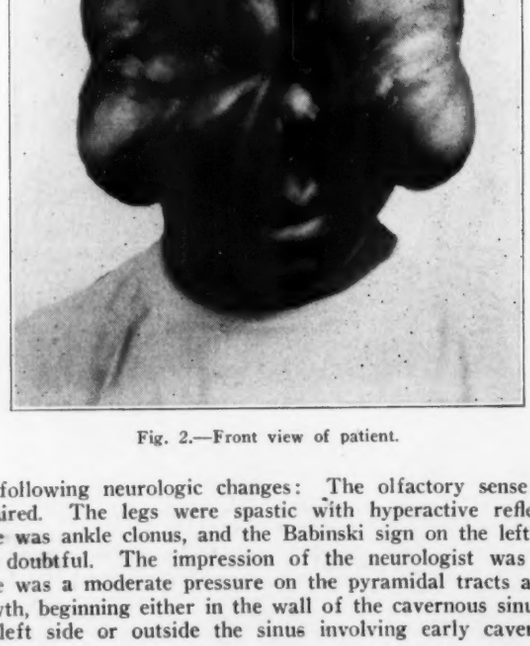

Fig. 2.—Front view of patient.

the following neurologic changes: The olfactory sense was impaired. The legs were spastic with hyperactive reflexes; there was ankle clonus, and the Babinski sign on the left foot was doubtful. The impression of the neurologist was that there was a moderate pressure on the pyramidal tracts and a growth, beginning either in the wall of the cavernous sinus on the left side or outside the sinus involving early cavernous sinus drainage and making pressure on the optic chiasm or just in front of it on the optic nerves. If new growth was outside the sinus, he would suppose it was growing from the floor of the anterior fossa.

No calcification was revealed roentgenographically in the orbital tumors.

The following laboratory observations are recorded: The blood count and urinalysis were negative. The Wassermann reaction of the blood and spinal fluid was negative.

The treatment instituted was surgical removal of the growth, and the patient died.

The pathologic diagnosis was chronic inflammatory granuloma of the orbits, optic nerves, optic chiasm and lower part of the abdomen with hydronephrosis from the ureteral obstruction by granulomatous masses. The orbital growth was retrobulbar.

BACTERIAL ENDOCARDITIS INVOLVING THE RIGHT CHAMBERS OF THE HEART

ADOLPH SACHS, M.D., AND SVEN ISACSON, M.D., OMAHA

Subacute bacterial endocarditis is a moderately common occurrence in most larger clinics. Libman has presented this syndrome so clearly to the profession that the diagnosis in most cases is readily made. The Libman facies, the clubbing of the fingers, the chills, fever and sweats, the enlarged spleen,

Fig. 1.—Multiple septic infarcts in the lung.

the showers of infarcts, the petechiae, the positive blood culture, the history of an old valvular endocarditis, the moderately prolonged illness and the usual fatal ending are so characteristic

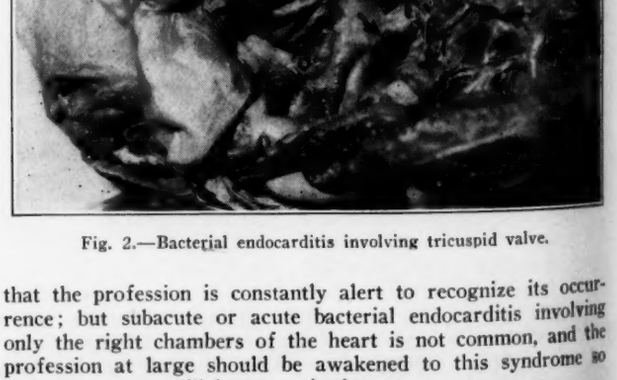

Fig. 2.—Bacterial endocarditis involving tricuspid valve.

that the profession is constantly alert to recognize its occurrence; but subacute or acute bacterial endocarditis involving only the right chambers of the heart is not common, and the profession at large should be awakened to this syndrome so that more cases will be recognized.

The right sided subacute bacterial endocarditis usually is found in old congenital heart lesions, but it may also occur without a recognizable congenital lesion. The symptoms of

right sided subacute bacterial endocarditis are the following: 1. Chills, fever, sweats, leukocytosis and the like are the same as in any septicemia. 2. Signs of atypical pulmonary infecton are present with patchy areas of consolidation. These may be confirmed by x-ray examination. The consolidations are due to pulmonary infarctions. 3. The spleen may or may not be enlarged; if it is it is due to sepsis, not infarction. 4. A positive blood culture occurs late if present at all. 5. The history or physical signs of a congenital lesion are of value but may be absent. 6. Signs of a right sided heart lesion may or may not be present. 7. There is no clubbing of the fingers unless it is due to an old congenital lesion. 8. The diagnosis is often made by exclusion. 9. Peripheral emboli, except in the lungs, are absent.

The lesion should be suspected if the (1) chills, fever, sweats and leukocytosis are present; (2) there is protracted pulmonary infection due to multiple septic infarcts, as revealed by physical or x-ray examination; (3) there is a cardiac lesion involving the right chambers of the heart; (4) typhoid, paratyphoid fever, undulant fever, malaria and the like can be excluded.

REPORT OF CASE

We report an illustrative case with the autopsy. This case ran a moderately malignant course. The patient entered the hospital May 30, 1936, and died June 18.

Miss C. M., aged 52, had just recovered from double lobar pneumonia and on admission complained of pain in the right upper quadrant, chills and fever, and sweats.

The past history was practically negative except that radium had been used for menorrhagia six years before, with uneventful recovery. She had had no rheumatism or serious infectious diseases. She had been deaf since childhood.

May 1, 1936, while the patient was teaching at an institute for the deaf, she had a sudden severe pain in the right upper quadrant and fever. After examination it was found that she had a diaphragmatic pleurisy with double lobar pneumonia. She had a stormy illness but made a nice recovery, so that she was able to sit up and walk a little. May 30 she had a severe chill lasting about twenty minutes, nausea, vomiting, and a temperature of 104 F. She was taken to the hospital and complained of pain in the right upper quadrant. She had a hacking cough but no bloody or rusty sputum. On examination, signs of consolidation in the right upper and left lower lobes were present, and a diagnosis of delayed resolution was made. X-ray examination corroborated it. The chills and fever continued at irregular intervals and she remained tender over the right upper quadrant. The liver was so tender that at one time we were suspicious of a liver abscess. All the usual agglutinations for undulant fever, typhoid, paratyphoid fever and the like were negative. Lobular patches of consolidation were increasing, and we felt that this undoubtedly was associated with her chills and fever. No malarial parasites could be found.

We were constantly watching for an endocarditis because of other negative observations plus the large spleen, the chills and fever and sweats. The blood picture merely showed a marked secondary anemia and a leukocytosis. The patient had no petechiae, no clubbing of the fingers, no showers of infarcts and no hematuria. Since no murmurs were present we were loath to diagnose an endocarditis. A blood culture was positive for pneumococci, June 12.

Laboratory studies revealed: white blood cell count varied between 10,000 and 18,000, with 80 to 88 per cent polymorphonuclears and a marked secondary anemia.

Urine analysis was negative.

There was a soft systolic blow, which is often heard during high fevers, but it was not constant. No thrills or pericardial friction rubs were present.

The patient's condition improved somewhat and she had an unusual euphoria.

She felt bad only during the chills and fever, which lasted about twenty-four or forty-eight hours.

By exclusion we felt that the only diagnosis that could be made was that of a bacterial endocarditis of an unusual type. The patient died suddenly June 18 and a postmortem examination was permitted after the body was embalmed.

Autopsy revealed a right sided endocarditis with multiple septic emboli in the lungs. There were no infarcts elsewhere, which is characteristic of this type of right sided endocarditis.

External examination revealed a small, well nourished body. The skin and visible mucous membranes were very white and showed no special markings except for a superficial bruise on the right upper arm. The body had been embalmed and rigor was marked.

The body was opened in the midline. The thoracic organs appeared to be in normal positions. In the abdomen the spleen was prominent and extended four fingerbreadths below the left costal margin. The left lung was free, the lower lobe was consolidated and presented a round necrotic area 3 cm. in diameter on the anterior surface; on cut section there were seen many red infarcted areas varying in size and age. The right lung had many fine pleural adhesions. There was a small infarct in the lower lobe; the rest of the lung contained air throughout. Peribronchial and mediastinal lymph nodes were enlarged and anthracotic.

The heart was approximately normal in size and the posterior coronary vessels were tortuous. The tricuspid valves presented soft friable, firmly adherent thrombi on all three cusps. The largest was found on the posterior leaflet and measured 2 by 2 by 1 cm. The left chambers were empty and the mitral leaflets were clean. The root of the aorta showed small atheromatous areas. The aortic and pulmonic valves were clean.

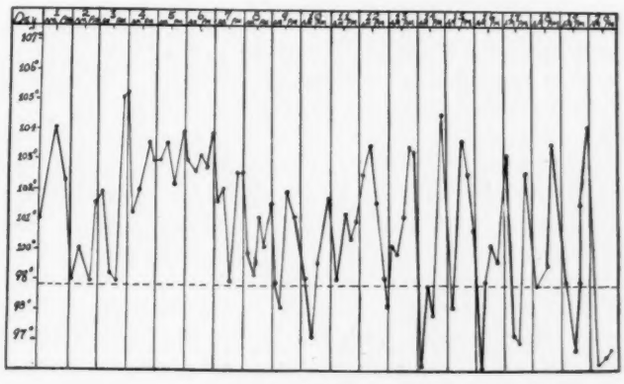

Fig. 3.—Temperature.

In the abdomen the spleen was seen to be greatly enlarged, approximately three times normal size, with rounded edges and a "pink paint" friable pulp, characteristic of a septic spleen. The liver, gallbladder, pancreas and gastro-intestinal tract showed no gross abnormalities and no infarcts.

Both kidneys were large, lobulated and congested. The adrenals were normal in appearance. No infarcts were present except in the lungs.

The pelvic organs were small and the ovaries were sclerotic. In the lower uterine segment was seen a small subserous fibroid and at the fundus was seen a small mucous polyp.

Section of the lung taken through an infarcted area showed a solid mass of fibrin, red and white blood cells and a barely recognizable lung stroma. Surrounding alveoli were filled with an albuminous fluid.

A section of the thrombus on the tricuspid valve showed an amorphous mass of platelets and fibrin in the periphery of which were seen masses of lymphocytes, a moderate number of polymorphonuclears and pneumococci.

The anatomic pathologic diagnosis was: (1) acute ulcerative pneumococci endocarditis, (2) septic pulmonary infarcts, (3) serofibrinous pleurisy and (4) acute septic spleen.

COMMENT

It is apparent that the pneumonia became complicated by an ulcerative tricuspid valvulitis on which large soft vegetations quickly developed and in turn gave rise to septic emboli, with infarctions in the lung. Death resulted from acute cardiac failure.

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Special Article

PHYSICAL AND PHYSIOLOGIC PRINCIPLES OF AIR CONDITIONING

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Air conditioning for comfort or health is the art of controlling the physical environmental factors to suit human requirements. Great strides have been made in the past few years along purely engineering lines, but our knowledge of human requirements is still incomplete and controversial.

In the present paper an attempt is made to digest and evaluate some of the basic physical and physiologic principles involved, and to point out where data are inadequate and where research is urgently needed.

THE NEED FOR AIR CONDITIONING

Alteration of the Atmosphere of Occupied Rooms.—In rooms occupied by many persons the air is altered physically and chemically by the processes of body metabolism and decomposition of matter in the skin and clothing. Contrary to earlier workers, we are not at all concerned now with the changes of oxygen and carbon dioxide from respiratory processes, because they ordinarily are much too small to be of any physiologic significance. The leakage of air through cracks around windows and doors is usually sufficient to maintain the oxygen and carbon dioxide well within normal limits.

Changes in the electrical characteristics of air, though striking,[1] have not been proved to be significant to the comfort or health of individuals.[2]

Volatile Organic Matter.—More important than oxygen or carbon dioxide in occupied rooms is the ill defined odoriferous organic matter arising from foul breath, sweat and sebaceous secretions (especially when personal hygiene is deficient), gases from the alimentary canal, and decomposition of matter in the skin and clothing. Man's sense of smell is extremely sensitive to inconceivably small concentrations of odoriferous matter that cannot be detected by known methods of chemical analysis.

Such odors are not known to be harmful but they certainly induce a feeling of stuffiness and odor discomfort on entering a room from outdoors. Under extreme conditions headache, nausea, loss of appetite and a disinclination for physical activity [3] may result in sensitive persons. Owing to olfactory adaptation, the occupants of a room may not be conscious of odor but they seem to be capable of detecting stuffiness or lack of freshness in the air.[4] The general agreement now is that all rooms should be provided with sufficient fresh air to prevent the accumulation of objectionable body odors.

The toxicity of expired air is constantly coming up in every discussion of the subject. Many persons, including a number of scientists, still hold the view that expired air may contain some poisons in minute concentrations; and, while a positive statement would be entirely unfounded, a negative view would be equally unwarranted. All one can say at present is that no poisonous substance has been demonstrated in expired air. Summaries of authentic contributions to both sides of this argument have been published by Billings, Mitchell and Bergey,[5] Flügge,[6] the New York State Commission on Ventilation,[3] Frederick [7] and Rosenau.[8]

Of considerable academic interest in this connection is a recent study by Gramenitzkii [9] indicating a weakening action of expired air on the isolated frog heart that cannot be accounted for by the action of carbon dioxide. The air of old and sick persons was found to be more toxic than that of young and healthy individuals.

Microbic Dissemination in Rooms.—After a period of dormancy, the problem of air-borne infection has now come again to the forefront. Recent experiments by Colvin [10] indicate that aerial infection beyond mouth spray limits takes place in occupied rooms. W. F. and M. W. Wells [11] have definitely shown that, although droplet infection is essentially localized and concentrated, infection by droplet nuclei is dispersed and dilute. Minute droplets, less than 0.1 mm. in diameter, ejected into the air by talking, sneezing and coughing, do not fall to the floor, as has been generally assumed,[12] but evaporate before they fall the height of a man. Pathogenic organisms in the dried droplet nuclei may remain suspended in the air for long periods and the virus may survive long enough to be transmitted to other persons in the same room or building.

By means of improved apparatus, Wells was able to recover droplet nuclei from cultures of resistant microorganisms a week after inoculation into an air-tight metal chamber. Organisms characteristic of the respiratory tract were recovered in small numbers forty-eight hours after inoculation, while organisms of the intestinal tract could not be recovered after eight hours. The Pfeiffer bacillus disappeared within an hour under the conditions of Wells's experiments.

The practical importance of these results in the transmission of disease depends on a number of complex factors, such as the specific character, virulence and number of infectious organisms encountered, the frequency of exposure, susceptibility of the individual, and so on, which need not be discussed here. According to

This is the first report of the committee established by the American Medical Association to study air conditioning. The committee includes: Carey P. McCord, Detroit, chairman; Emery R. Hayhurst, Columbus, Ohio; William F. Petersen, Chicago; Horatio B. Williams, New York, and Constantin P. Yaglou, Boston.

1. Yaglou, C. P.; Benjamin, L. Claribel, and Brandt, Allen: The Influence of Respiration and Transpiration on Ionic Content of Air of Occupied Rooms, J. Indust. Hyg. **15**: 8 (Jan.) 1933. Wait, G. R., and Torreson, O. W.: Large-Ion and the Small-Ion Content of Air of Occupied Rooms, Am. Soc. Heating & Ventil. Engrs. Journal Section, Heating, Piping and Air Conditioning **7**: 105 (Feb.) 1935.

2. Yaglou, C. P.; Brandt, A. D., and Benjamin, L. Claribel: Observations on a Group of Subjects Before, During and After Exposure to Ionized Air, J. Indust. Hyg. **15**: 341 (Sept.) 1933. Herrington, L. P.: The Influence of Ionized Air upon Normal Subjects, J. Clin. Investigation **14**: 70 (Jan.) 1935. Edström, Gunnar: Studies in Natural and Artificial Atmospheric Electric Ions, Acta med. Scandinav., Supp. 61, p. 1, 1935.

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4. Yaglou, C. P., and others: Ventilation Requirements, Am. Soc. Heating & Ventil. Engrs. Journal Section, Heating, Piping and Air Conditioning **9**: 65 (Jan.) 1936.

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10. Colvin, M. G.: Air Dissemination of Bacteriophage in Relation to Air Borne Infection, Am. J. Hyg. **15**: 247 (Aug.) 1932.

11. Wells, W. F., and Wells, Mildred W.: Air-Borne Infection, J. A. M. A. **107**: 1698 (Nov. 21) 1936.

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Dudley [13] a certain minimum number of specific pathogenic organisms in the air is desirable and probably beneficial, as they stimulate immunity by acting as vaccines.

The probability of meeting pathogenic organisms in sufficient numbers to break down the natural body defense is intimately associated with the floor area and air space per person and the quantity of fresh air supplied. The problem is extremely complex, as it is difficult or impossible to separate contact infection from air-borne infection. Except in overcrowded and badly ventilated rooms, the danger is believed to be "much contracted in space, limited in time and restricted to comparatively few diseases." [14] The value of ventilation in infection is stressed by many, particularly de Crespigny,[15] Dudley,[13] and Frederick.[7]

A recent devolpment of considerable significance to contagious wards and operating rooms is the use of ultraviolet radiation for sterilizing air.[16]

Temperature, Humidity and Air Movement.—It is now generally recognized that the most important change in the air of occupied and poorly ventilated rooms is the increase of temperature and humidity caused by the heat and moisture given off from the skin and lungs of the occupants. The most common complaint in crowded rooms is not lack of ventilation but overheating; stuffiness and odors are secondary contributing causes. The depression and discomfort felt is similar to that experienced on a warm and humid summer day and the primary object of air conditioning, therefore, is to reduce the temperature and humidity to within comfortable limits. In cold weather this is done by the introduction of cool outdoor air after tempering it to a suitable temperature, with or without artificial humidification. In warm weather the air must be cooled and dehumidified.

A secondary object of air conditioning is to circulate a sufficient amount of fresh clean air through the room in order to dilute the odoriferous matter below the objectionable concentration. This must be accomplished without drafts. When these conditions are fulfilled, all other factors will be automatically taken care of satisfactorily under the usual conditions of life.

PHYSICAL AND PHYSIOLOGIC BASES OF COMFORT

Heat Regulation in Man.—Although life and heat are concomitant, the heat produced in the body is a by-product of metabolic processes and the amount is far in excess of the usual requirement for keeping the body warm. Nature has provided suitable means in the skin and lungs for the removal of the excess heat and for the maintenance of an optimum internal temperature.

A fundamental requirement of all living organisms is the ability to adapt constantly to the ever changing physical environment, which tends to upset the temperature equilibrium of the body. Under the usual conditions of life these adjustments are so easily accomplished that a normal person is unconscious of the complex physiologic processes at work. Discomfort arises when thermal equilibrium is impossible or when abnormal reactions are involved in the transitional period of adaptation. The ability to adapt varies widely; metabolism, peripheral circulation and physical and subjective symptoms show great variability in different persons under identical environmental conditions.

Sensations of heat or cold are not due to changes in internal body temperature but largely to changes in the temperature of the skin. Although every physiologist accepts the existence in the brain of a heat regulating center that coordinates the multitude of functions involved in heat regulation, there is considerable controversy as to how this heat center is normally stimulated.

According to the prevailing school of thought, induction of the stimulus is by afferent neurons with endings in the skin that are sensitive to temperature. The actual existence of such receptors has never been demonstrated, although the experiments of Adrian,[17] Bazett,[18] Dallenbach [19] and Strughold and Karbe [20] are particularly suggestive.

An alternate view is that only a small change in the blood temperature is sufficient to stimulate the central nervous system. The evidence on both sides is admirably reviewed by Martin [21] and Ranson [22] and it would seem that both theories may be true. That the heat regulating center is itself sensitive to temperature was demonstrated by Barbour,[23] Moorhouse [24] and others.

By whatever means the centers may be aroused, efferent neurons transmit the activating impulses from the central nervous system to the various organs of the body controlling heat production and heat loss for the restoration of normal body temperature. The organs involved in heat production include the musculature, the liver and the endocrine glands; those primarily concerned with heat loss are the blood vessels of the skin and lungs and the sweat glands.

Under ordinary conditions, the vasomotor changes are apparently induced by nerve reflexes. The cutaneous blood vessels are also affected through the sympathetic nerves by the action of cold on distant parts of the body's surface. According to Martin,[21] direct sensitivity of the centers to the temperature of the blood returning from the skin is essential for the control of the reflex mechanism after the latter has accomplished its purpose. Otherwise the reflex action would become progressive and the internal temperature would continue to rise or fall with a fall or rise in the skin temperature.

The workings of the heat regulating mechanism are extremely complex and are not well understood. When the external temperature rises, the blood vessels of the skin dilate by reflex vasomotor action and probably by the direct action of heat on the vessels. More blood flows through the skin, thus raising its temperature and therefore the heat loss. The rise is least in the skin of the forehead and trunk and greatest in the extremities, particularly the feet.[25] If this method of

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19. Dallenbach, K. M.: The Temperature Spots and End Organs, Am. J. Psychol. **39**: 402, 1927.
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cooling is not sufficient to prevent a rise of body temperature, the sweat glands are thrown into full action by the stimulus of the heated blood flowing through the center. Finally the activity of the adrenals and the thyroid is depressed by sympathetic inhibition and the metabolism is lowered.[26] In this way thermal equilibrium may be reestablished if the external temperature is not too high.

On exposure to cold, a reverse action takes place. The skin vessels constrict and the blood supply is curtailed in order to conserve body heat. If this response fails to prevent the body temperature from falling, there is a definite increase in metabolism, effected partly by voluntary muscular contractions and partly by stimulation of the adrenals and thyroid.[27] Such alterations in endocrine secretion are probably the chief factors involved in the adaptation of the organism to warm and cold climates.

Comfort as Related to Physical Air Factors.—Comfortable air conditions are those under which the human body is able to maintain a normal balance between the production and loss of heat at normal body temperature

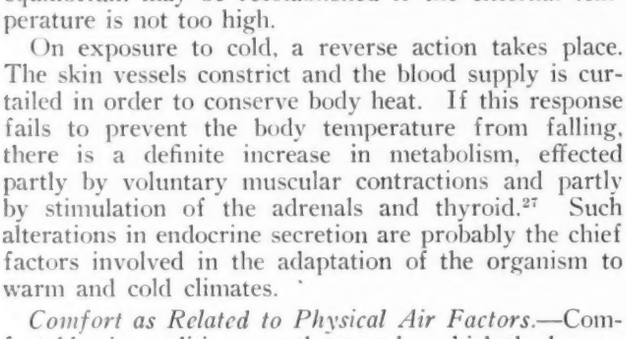
DRY BULB TEMPERATURE WITH 50% R.H. & STILL AIR
55 65 75 85 95 105 115
C- NORMAL HEAT LOSS
B- NORMAL HEAT PRODUCTION
A- BASAL HEAT PRODUCTION
CALORIES PER SQ. METER PER HR.
B.T.U. PER SQ. FT. PER HR.
70 60 50 40 30 20 10 0
25 20 15 10 5 0
45 55 65 75 85 95 105
EFFECTIVE TEMPERATURE °F.

Chart 1.—Heat production and heat loss of healthy young men in relation to "effective temperature." Curve *A*, courtesy Archives of Internal Medicine.[27] Curves *B* and *C*, men seated at rest; after Houghten, Teague, Miller and Yant,[28] courtesy American Journal of Physiology.

without the individual being conscious of undue effort on the part of the heat regulating mechanism. Heat loss should preferably take place in the manner to which the individual has been adapted by climate, season, clothing and general living conditions. This is not generally recognized, however; the prevailing belief is that the method of heat loss makes little difference to the comfort of an individual as long as the total heat loss is adequate. If this were true, one should be comfortable when the entire heat loss takes place by evaporation of sweat with total metabolism and heat loss remaining normal, as for instance on exposure to a temperature of 100 F. and a relative humidity of 20 per cent (chart 1).

Four principal factors are generally recognized as affecting comfort and quality of the air: temperature, radiation, air movement and humidity. None of these are independent of the others, and the human body reacts to them as a whole. Wide national and international differences of opinion exist concerning the application of these factors.

No comfort standards can be fixed to apply under all conditions, although it is possible to derive limits that would meet the requirements of a majority in any given homogeneous group under certain conditions. The factors determining the selection are largely individual, owing to wide biologic diversity and variable response of different persons to a given physical environment. Climate and season, social and economic status, state of health, age, sex, clothing, activity and degree of native or acquired adaptation are among the important modifying factors. The variation in temperature may be from 50 to 100 F., with a very wide range of humidity.

Still more difficult to fix are the optimum air conditions for health, since an individual's health is a complex physiologic balance, an "imponderable subjective and objective" that cannot be expressed in terms of physical units. We must therefore content ourselves with evaluating health aspects of air conditions on the basis of physical comfort or discomfort, records of colds, physical and mental efficiency and the like, however variable and relative these criteria may be.

Under ordinary conditions the total metabolism and heat loss remain substantially constant over a rather wide range of temperature and humidity (chart 1), but the degree of comfort experienced may vary considerably within this range, depending on the adjustments the body must make to maintain heat equilibrium. Owing to a number of physical, physiologic and psychologic factors, thermal equilibrium is never entirely fulfilled at any given moment, as shown by fluctuations of body temperature and metabolic rate within certain limits even under basal conditions. Over a period of time, however, the assumption of thermal equilibrium must necessarily hold true.

Heat loss from the human body takes place by radiation to surrounding walls and objects, by conduction and convection to surrounding air, and by evaporation of moisture from the lungs and skin. Under comfortable conditions during the heating season, radiation usually accounts for between 46 and 60 per cent of the total heat loss, convection for from 15 to 30 per cent, and evaporation for from 20 to 30 per cent. The variation in loss through these different channels depends largely on physical and physiologic factors, the former including the temperature of the air and walls and the body surface exposed. The physiologic factors include the state of heath, metabolic rate, vasomotor control and other secondary factors. At the usual indoor temperature of 70, the average normal radiation loss is approximately 50 per cent of the total loss, convection loss is 25 per cent, and evaporation loss is 25 per cent.[28]

Loss of heat by radiation depends on the temperature of the surrounding walls and objects and is independent of air temperature. The rate of loss is according to Stefan's fourth power law as demonstrated by Aldrich,[29] Fishenden and Saunders[28] and recently by Winslow and his co-workers.[30] Air temperature directly affects heat loss by convection from the surfaces of the body and indirectly by evaporation, as will appear later. Air

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movement increases convection loss and reduces to some extent the radiation loss by lowering the surface temperature of the body. With powerful air currents, convection loss may become a very important factor, but such conditions are outside the limits of comfort.

About 9 per cent of the total heat loss takes place by evaporation from the lungs and upper respiratory passages, and 16 per cent by evaporation from the skin. To an insignificant extent the former varies with vapor pressure of the water vapor in the air and is therefore a function of absolute humidity to that small extent. Evaporation from the skin is limited to the amount of moisture present on it, and this amount remains substantially unaffected by humidity and, up to a certain point, by temperature also,[31] as shown in chart 2. Insensible perspiration is now known to be largely diffusion of water through the capillaries and is almost independent of sweat gland activity.[32] Sweating is an emergency process that comes into play in warm environments or during muscular work, and the output of sweat is controlled not by humidity but by temperature (chart 2). Von Willebrand,[33] Adolph,[34] Houghten,[28] Campbell and Angus [31] and many others have shown that insensible perspiration increases gradually with the environmental temperature up to a certain critical temperature of about 90 F., at which point visible sweating breaks out. The importance of humidity on sensation of warmth and comfort follows the temperature and perspiration curve; it is minimum during the heating season, as Howell,[35] Miura,[36] Phelps and Voit,[37] the New York State Commission on Ventilation [3] and the effective temperature index [38] indicate, and maximum during warm weather when profuse sweating takes place. Heat loss by radiation and convection follows an opposite course, decreasing with increasing temperature, as shown in chart 2.

The important factors in air conditioning during the heating season are, therefore, the temperature of the air and of the enclosure and the rate of air movement with respect to drafts. In buildings of good construction, heated by the usual convection methods, the temperature of exposed walls is but a few degrees below air temperature, and the air movement is usually between 15 and 50 feet per minute. Consequently, air temperature is the predominant factor. In most localities in the United States, where central heating is used for from six to eight months of the year, a temperature between 69 and 73 F. with natural or moderately low humidity and freedom from drafts will meet the requirements of the majority of persons of sedentary pursuits. Lower temperatures are indicated in manual labor, depending on the degree of exertion.

Humidity.—The human body has no receptors in the skin for recognizing degrees of humidity, but it is affected indirectly in a physical manner when the temperature is either too low or too high. At temperatures below 45, a high humidity makes the air feel colder because it increases the heat conductivity of clothing. At high temperatures a high humidity makes the air feel even warmer, because it interferes with evaporation of perspiration.

Under ordinary indoor conditions during the heating season, variations of humidity are relatively unimportant as far as warmth and comfort are concerned, and from the standpoint of health there are no data to prove that artificial humidification is necessary. With the exception of Huntington's [39] statistical studies and the clinical studies of Blackfan and Yaglou [40] on premature infants, practically all physical, physiologic and psychologic tests have proved to be negative or inconclusive.[41] No one disputes the injurious effect of low humidities to household furniture, but the argument about health has little foundation in proved fact.

Extremely low humidities of the order of 15 per cent or less may affect our comfort and possibly our health by drying the mucous membrane of the nose, but such

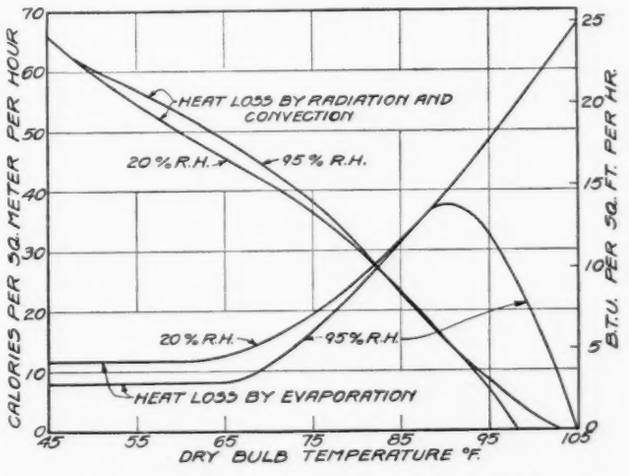

Chart 2.—Normal heat loss by evaporation and by radiation and convection combined, in relation to environmental temperature and humidity. After Houghten, Teague Miller and Yant,[28] courtesy American Journal of Physiology.

humidities are unusual unless the air is overheated. During the coldest months of the year the ordinary variation is between 20 and 30 per cent. The walls and furnishings of a room, although apparently dry, are capable of storing large quantities of moisture when the humidity is relatively high [42] and releasing it when the humidity falls. For this reason the relative humidity never falls to the theoretical minimum of about 5 per cent in zero weather—a value often used as an argument in favor of artificial humidification.

Although normal persons generally prefer a low humidity (25 per cent) to a high one (40-60 per cent) when given an opportunity to compare the two in adjoining conditioned rooms, sufferers from frontal sinusitides and other infections of the upper respiratory tract characterized by excessive dryness of the nose have shown a strong preference for the high humidi-

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41. Stecher, L. I.: The Effect of Humidity on Nervousness and on General Efficiency, Arch. Psychol., December 1916. Wolf: Ueber Zimmerluftbefeuchtung, Arch. f. Hyg. **106:** 168 (June) 1931. Ventilation Report of the New York State Commission on Ventilation.[3]

42. In rainy weather, from cooking, washing, bodies of occupants, and so on.

ties.[43] According to them, humid air was fresher and easier to breathe than air of the same temperature but of lower moisture content. The same subjects, however, disliked the humid air after their condition cleared up. In catarrhal conditions of the nose a low humidity also seems to be more agreeable than a high one,[44] but data on this are too limited at present to serve as a basis for final conclusions.

The tendency to dryness of the nose and throat under low humidities and its possible effect on respiratory disorders should be investigated. Possible disturbances of water balance and symptoms of discomfort under extremes of humidity should also be investigated with the temperature kept at normal.

Air Movement and "Freshness."—Air freshness as perceived by the normal nose is mainly a function of temperature, humidity and amount of odoriferous matter in the air. Moderately dry and cool air is fresh and invigorating, whereas warm air is stuffy and depressing, no matter how pure it is chemically.

Body odors, odors from scorched dust settling on radiators and odors from gaseous products of combustion in industrial districts detract considerably from the freshness and pleasantness of air.[45]

Hill [46] attributes the chief cause of stuffiness in a heated room to the long infra-red rays emitted by dark or dull red sources of heat. He ascribes the congestion in the nose not to a direct effect of heat on the mucous membrane, as is generally believed, but to specific electromagnetic wavelengths acting reflexly from the sensory nerves of the skin. Rays from bright luminous sources ("nose-opening" rays) have an opposite effect, according to Hill, but this could not be demonstrated by others.[47]

Air freshness as perceived by the skin is a function of temperature, air movement variability and humidity. The agreeable sensation of freshness is ascribed to a stimulating action of the cutaneous sensory nerves by mild air currents within the threshold of perceptibility. According to Baetzer [48] the threshold current on the skin of the cheek has a velocity of from 40 to 60 feet per minute at normal room temperatures. On the skin of the feet the threshold values seem to be considerably lower. The greater the temperature, the greater the threshold velocity and vice versa. A uniform air movement is regarded as monotonous and less stimulating than oscillating air currents below and above the threshold velocity. Here may lie, in part, the explanation for the preference of window ventilation over the mechanical systems, with temperature fluctuations closely related.

Temperature Changes.—Although a moderate variability of temperature is generally considered to be stimulating and probably beneficial, there is a happy medium beyond which extremes are destructive. Great contrasts such as those experienced in passing from an overheated room to cold outside air appear to be harmful to the mucous membranes of the upper respiratory passages. The deleterious effects of low or high temperatures, apart from acute conditions (frost bite, heat stroke) do not seem to be due to cold or heat per se but largely to great temperature contrasts which produce congestion and ischemia and weaken the physiologic defenses against bacterial proliferation. Respiratory diseases and rheumatism are the chief disorders associated with exposure to great temperature changes. The highest rates are seen among iron and steel workers, miners, outdoor laborers and others who habitually expose themselves to great temperature contrasts.[49]

The condition of the vasomotor system may play an important rôle in the whole situation for, as is well known, a secondary reactive vasodilatation occurs in healthy individuals during exposure to cold, with a rise of skin and deep tissue temperature and a general feeling of warmth. Metabolism and heart action are increased and the organism is in a better position to withstand the cold.

An adequate vascular system may not be successful in overcoming the ischemia incident on chilling. The vessels of the skin and nasal membranes remain constricted and the blood is diverted to the internal organs. Metabolism does not increase sufficiently to prevent the body temperature from falling. There is much good evidence to show that difficulties with the heat regulating mechanism of the body are fundamental in the predisposition to colds and other more serious ailments.

The inability of Kerr and Lagen [50] to transmit common colds from carriers to susceptibles in an air conditioned chamber might be explained by the control of predisposing environmental factors. Their experience, as well as that of Van Loghem [51] and others, does not necessarily contradict the widespread belief in the contagiousness of the common cold even though the specific organism causing it has not as yet been identified.

Petersen [52] and Mills [53] lay great stress on the effects of frequent atmospheric changes of temperature and barometric pressure which lead to nervous instability and a number of diseases of exhaustion.

Drafts.—In dealing with drafts, much simplification is possible by defining the conditions productive of drafts at the feet, the part of the body most sensitive to drafts owing probably to the comparatively poor blood circulation there. The back, the back of the neck and the top of the head are also sensitive to drafts, but the draft threshold of these parts is higher than that of the skin of the feet.

Although drafts and cold feet are often due to faulty heating and air distribution systems, the complaints under ordinary room conditions, coming as they do usually from a comparatively small percentage of the occupants, would seem to be more often associated with poor blood circulation and deficient vasomotor response than with faulty air conditions. They are apparently the result of a tendency to instability of the heat regulating mechanism in certain individuals as well as in normal persons under certain circumstances.

43. Yaglou, C. P.: Unpublished data.
44. Hosmer, M. N.: Observations on Patients in Air Conditioned Hospital Rooms, Hospitals **10**: 87 (Oct.) 1936. Yaglou.[43]
45. Winslow, C.-E. A., and Herrington, L. P.: Subjective Reactions of Human Beings to Certain Outdoor Atmospheric Conditions, Am. Soc. Heating & Ventil. Engrs. Journal, Section Heating, Piping and Air Conditioning **7**: 551 (Nov.) 1935. Winslow and Herrington.[3] Yaglou and others.[4]
46. Hill, Leonard: Discomfort of Close Rooms Caused by Infra-Red Rays, Quart. J. Exper. Physiol. **23**: 35 (Aug.) 1933.
47. Dufton, A. F., and Bedford, T.: "Nose-Opening" Rays, J. Hyg. **33**: 476 (Nov.) 1933. Winslow, C.-E. A.; Greenburg, Leonard, and Herrington, L. P.: The Influence of Heat and Light upon Nasal Obstruction, Am. J. Hyg. **20**: 195 (July) 1934.
48. Baetzer, A. M.: Threshold Air Currents in Ventilation, Am. J. Hyg. **4**: 65 (Nov.) 1924.
49. Yaglou, C. P.: Abnormal Air Conditions in Industry: Their Effects on Workers and Methods of Control, J. Indust. Hyg. **19**: 12 (Jan.) 1937.
50. Kerr, W. J., and Lagen, J. B.: Transmissibility of the Common Cold: Exposure of Susceptible Individuals under Controlled Conditions, Proc. Soc. Exper. Biol. & Med. **31**: 713 (March) 1934.
51. Van Loghem, J. J.: An Epidemiological Contribution to the Knowledge of the Respiratory Diseases, J. Hyg. **28**: 33 (Aug.) 1928.
52. Petersen, W. F.: The Patient and the Weather, vol. III, Mental and Nervous Diseases, Ann Arbor, Mich., Edwards Brothers, Inc., 1934.
53. Mills, C. A.: Climate as a Factor in the Health of Man, Am. J. Hyg. **15**: 573 (March) 1932; Health and Diseases as Influenced by Climatic Environment, Internat. Clin. **2**: 143 (June) 1936.

Numerous observations on myself at various times of the year for three consecutive years have shown an enormous variability of foot temperature and sensitivity to drafts under approximately identical conditions in my office while working at a desk for at least two hours before making observations. With comfortable breathing zone temperatures between 70 and 74 F., floor temperatures of 67 to 74, and air movement about the feet of from 20 to 70 feet per minute, the temperature of my feet near the ankles varied from 75 to 91 F. during the months of December to March. Much higher skin temperatures were recorded on all other parts of the body, the temperature ranging from 90 to 98 F. While the average foot temperature showed some relationship to floor temperature and air movement, many individual observations of different days showed no consistent relationship at all.[43] Bedford [25] likewise observed a great variability of foot temperature among a large group of British factory workers performing light work.

My threshold of draft occurred at a foot temperature of 80-82 F., regardless of air conditions. Uncomfortable drafts were felt at foot temperatures under 80. The lowest foot temperatures and the greatest difficulty with drafts were experienced during the month of February 1936, when I had a bad cold of long duration accompanied by considerable loss of weight. The highest foot temperatures (94-97 F.) were observed during the warm months of the year when the room temperature was between 85 and 95.

Complaints of drafts or cold feet from among large groups of men, women and children in experimental conditioned rooms occurred at any floor level temperature equal to or lower than the comfortable breathing zone temperature and at all air velocities produced by the apparatus; namely, from 20 to 65 feet per minute. The majority of the complaints came from women. The lowest foot temperature observed in this group was 74 and the highest 93, both under ordinary room conditions during the heating season. The lowest draft threshold occurred at a foot temperature of 78.

Theoretically it may be possible to reduce complaints of drafts among the minority by raising the foot level temperature and reducing the air movement to below the threshold of perceptibility. Practically this is difficult to accomplish with conventional heating systems without overheating the breathing zone for the majority of occupants. The problem would seem, therefore, to be one for the individual himself to solve by the use of suitable clothing that will protect the extremities against too rapid heat loss and in this way to compensate for inadequate vasomotor response. In order to assist the vasomotor system, certain reasonable limits of foot level temperature and air movement must be established that will be agreeable to the majority of normal individuals. Observations by Houghten [54] and those of my own indicate a foot level temperature not more than 2 degrees F. below the comfortable breathing zone temperature, with an air movement not over 40 feet per minute during the heating season.

Drafts on the feet or any other part of the body have a tendency to induce reflex vasoconstriction in the entire superficial area and vasodilatation in the mucous membranes of the nose. The blood pressure may rise and nasal capillary hemorrhage may result in sensitive persons. The problem has a great bearing on comfort and health and deserves far more attention and study than it has hitherto been given.

Atmospheric Pollution.—Aside from specific industrial conditions, dusts, smoke and gases of combustion in ordinary city air are generally believed to be not so much matters of health as of nuisance and esthetics, capable of affecting comfort directly or indirectly. Although the damage to property and vegetation is considerable and generally recognized, the evidence on health aspects is quite controversial except under extreme conditions of pollution.[55]

The control of atmospheric pollution is primarily a problem of city planning, but under present circumstances it has been more expedient to deal with it inside the buildings as part of air conditioning. Activities within the building itself constitute another source of pollution. The use of tightly fitting storm sashes and doors in conjunction with vacuum cleaning helps a great deal in reducing dustiness. The advantages of air filtration are limited to the larger dust particles, as very fine dusts, smoke and gases defy most of the filters in common use.

55 Shattuck Street.

54. Houghten, F. C., and others: Classroom Drafts in Relation to Entering Air Stream Temperature, Am. Soc. Heating and Ventil. Engrs. Journal Section, Heating, Piping and Air Conditioning **7**: 356 (July) 1935.

55. Bloomfield, J. J.: Atmospheric Smoke Pollution and Its Relation to Public Health, Outdoor Life **25**: 457 (Aug.) 1928. Effect of Air Pollution on Health, Bull. New York Acad. Med. **7**: 751 (Sept.) 1931. Ruskin, S. L.: Pollution of the City Air as a Source of Nose and Throat Disturbance, Science **84**: 84 (July 24) 1936. Ventilation and Atmospheric Pollution, Rept. Comm. on Ventilation and Atmospheric Pollution, Am. Pub. Health A. Year Book, 1934-1935.

Council on Physical Therapy

THE COUNCIL ON PHYSICAL THERAPY HAS AUTHORIZED PUBLICATION OF THE FOLLOWING REPORT. HOWARD A. CARTER, Secretary.

SPERTI SUNLAMP NOT ACCEPTABLE

Manufacturer: Science Laboratories, Inc., 424 East Fourth Street, Cincinnati (Successor to Science Laboratories).

One of the functions of the Council on Physical Therapy is to report, from time to time, on newly marketed devices recommended for use in physical therapy.

Such a device is the Sperti Sunlamp, regarding the merits of which the Council has recently received inquiries.

I. CONSTRUCTION AND OPERATION OF THE SPERTI SUNLAMP

This device consists of two lamps—the one within the glass enclosure of the other—constructed somewhat as described in U. S. patents 1,956,958 and 1,976,149. The outer bulb contains an incandescent tungsten filament, which provides a source of visible radiation. The much smaller, inner tubular enclosure contains a globule of mercury and electrically heated electrodes, which produce a thermionic conduction through the mercury vapor. The tubular enclosure of the mercury arc lamp is made of thick glass to absorb the rays of wavelengths shorter than about 2,800 angstroms.

The combined lamp can be screwed into an ordinary lighting fixture, without additional starting or controlling devices, and used in place of the ordinary incandescent lamp of similar wattage.

The lamps examined are designed for use on 110 to 120 volts and consume about 100 watts on about 115 volts. A considerable portion of the electric power consumed is used in the inner, mercury vapor, lamp. The temperature, candle power and ultraviolet emission of the tungsten filament in the Sperti Sunlamp is therefore considerably lower than that of a commercial 100 watt tungsten filament lamp, on normal operation.

For example, the illumination at one foot below the Sperti Sunlamp (in a frosted bulb, aluminum reflector, type NR) was 70 foot candles as compared with 120 foot candles for a

regular commercial 100 watt tungsten filament lamp (frosted bulb, no reflector). This information is of importance if an attempt is made to use the lamp for illumination.

II. ADVERTISING MATTER

No advertising matter was submitted by the firm. The advertising literature, sent to the Council by the public, contained unsubstantiated statements. The advertising in the daily newspapers, by purveyors of these lamps, if intelligently interpreted, gives ample warning to the prospective purchaser that the ultraviolet intensity of the Sperti Sunlamp is low and that he need not expect to obtain much ultraviolet from such a lamp, unless he has the patience to spend enough time under it to get a sufficient dose.

III. PHYSICAL MEASUREMENTS OF SPERTI SUNLAMPS

In the course of a year, five samples (three shipments) of Sperti Sunlamps were investigated in a laboratory acceptable to the Council. Three of the lamps were in frosted bulbs with aluminum reflectors attached (type NR, 110 to 120 volts) and two of the lamps were in bulbs of clear glass—the one having a neckband reflector of aluminum. All lamps were new and in good condition. By means of a voltmeter and ammeter the power consumed in the lamp was regulated to 100 watts (about 115 volts) as specified.

1. *Spectral Radiation Measurements.*—Owing to the reduced temperature, the ultraviolet spectral intensities of the tungsten filament are too low for measurement. Using a Sperti Sunlamp in a bulb of clear glass, spectral intensity measurements were made on the emission lines of the mercury arc at 2,967, 3,024 and 3,132 angstroms and longer wavelengths. The relative spectral intensities of the mercury arc were found much the same as observed in certain types of acceptable sunlamps enclosed in glass bulbs. The total intensities, however, are much lower, owing to the small size of the arc.

2. *Integrated Ultraviolet and Candle Power Measurements.*—The illumination (foot candle) measurements were made with a newly standardized General Electric illuminometer. The integrated ultraviolet intensities were measured with a dosage intensity meter, consisting of a balanced amplifier, photo-electric cell and micro-ammeter. The titanium photo-electric cell used has its maximum spectral photo-electric response at 2,950 angstroms and it is insensitive to wavelengths longer than about 3,300 angstroms. It therefore gives a physical measurement of biologically effective radiation. By means of a filter, the measurements are confined principally to wavelengths 3,132 angstroms and shorter, recognized as having a specific effect in curing rickets. In the case of the Sperti Sunlamp this biologically effective radiation is confined principally to the three emission lines of the mercury arc at 2,967, 3,024 and 3,132 angstroms, respectively, the ultraviolet radiation contributed by the tungsten filament being exceedingly small. These three emission lines of the mercury arc therefore act as a substitute for the band of ultraviolet of wavelengths 2,950 to 3,132 angstroms in sunlight.

At a distance of one foot below the lower edge of the type NR frosted bulb lamps, the illuminometer indicated an intensity of 70 foot candles (100 watts in the lamp), and the intensity of the ultraviolet of 3,132 angstroms and shorter wavelengths was 0.07 micro-ampere (μA) on the ultraviolet meter (average of two lamps). In contrast, by actual measurement, 70 foot candles of sky light (noon day and mid-winter) through an open window produced a micro-ammeter reading of 0.35 micro-ampere per foot candle; the ultraviolet in sky light is five times that of the Sperti Sunlamp. Accepting the manufacturers' statement that the biologically active ultraviolet, per foot candle of the visible energy, is a close approximation of natural sunlight, with only 70 foot candles available in the Sperti Sunlamp as compared with from 8,000 to 10,000 foot candles in noon hour, midsummer sunlight, the total ultraviolet intensity in sunlight is from 100 to 150 times that available in the Sperti Sunlamp.

By calibrating the photo-electric ultraviolet meter against a standard of ultraviolet radiation, the intensity of the ultraviolet of wavelengths shorter than and including 3,132 angstroms at one foot below the Sperti Sunlamp (on 100 watts) was found to be 0.392 μW/cm.^{2} or 0.098 μW/cm.^{2} at two feet —the standard distance.

The Council's specification for acceptance of this type of sunlamp, for home use, is 27 μW/cm.^{2} In other words, the ultraviolet intensity of the Sperti Sunlamp (at two feet distance) is only about $\frac{1}{275}$ the value required for acceptance by the Council.

When the company was first informed that the Council voted not to include the Sperti Sunlamp in its list of accepted devices, the firm replied that it wished to submit biologic evidence; hence, publication of the Council's previously prepared report was postponed.

The evidence presented consisted in part of protocols of experiments on the prevention of rickets in rats by means of irradiation with Sperti Sunlamps. Test rats, fed a vitamin D free diet (Steenbock 110), were exposed to a battery of five Sperti Sunlamps at a distance of 15 inches for a minimum of two hours daily for twenty-one days. A similar group of rats was exposed to irradiation from five 60 watt tungsten lamps for two hours daily; a third group was fed the basal vitamin D free diet supplemented with adequate amounts of vitamin D, and a fourth group was retained as a negative control. In each instance the five lamps were fixed in a reflector of size 8½ by 20 by 34 inches, made of sheet iron lined with aluminum foil. The average percentage of bone ash in each group of rats is reported as follows:

	Per Cent
Positive control	46.72
Sperti Sunlamp	47.00
Incandescent lamp	35.43
Negative control	34.51

Data were also submitted regarding the prevention of rickets in chickens fed an unspecified rachitogenic diet. The chickens were divided into three groups; one group was exposed to indirect light; the second group was housed under identical conditions, but the indirect light supplemented by irradiation from an unspecified number of Sperti Sunlamps for eight hours daily; the third group was housed under the same conditions, but the indirect light was supplemented by irradiation from an unspecified number of Sperti Sunlamps for four hours daily. In each instance the experiment was continued over a period of four weeks. The distance from the lamp to the chickens was not given. Roentgenograms of the leg joint of the chickens were submitted. These roentgenograms indicated that the chickens irradiated by the Sperti Sunlamps were protected from rickets. Photographs of two of the irradiated chicks showed them improved in health but still rough feathered.

The firm's report was given careful consideration. It was noted, however, that prolonged irradiation from a number of the lamps was required to produce an antirachitic effect in either rats or chickens. In the case of rats it was necessary to place the reflector containing five Sperti Sunlamps at a distance of 15 inches from the backs of the animals.

The foregoing biologic evidence, in the opinion of the Council, was not satisfactory and the firm was given an opportunity to submit further biologic data.

These consisted of irradiation tests on rats, housed in screened cages, 20 by 18 by 18 inches, and fed on a rickets-producing diet. The lamps used to irradiate the rats were of the clear glass bulb type, mounted horizontally in the tops of the cages so that the mercury vapor arcs were approximately in the center of the cages. An aluminum painted reflector was mounted directly above each light. It appears therefore that the heads (ears) and backs of the rats were at a distance of 5 to 7 inches from the mercury glow discharge in the lamp.

The rats, thus housed, were irradiated two hours daily and, at the expiration of seven days, roentgenograms of the leg joints showed appreciable healing of rickets.

This supplementary report was given careful consideration. It was noted that the lamp had not been operated in a practicable position; that if the lamp had been operated in the customary manner (lamp vertical) and at the customary distance of 24 inches, the intensity would have been reduced by one fourth to one seventh, requiring an exposure of eight to fourteen hours or more daily, as compared with the two hours daily used to effect the healing indicated in the roentgenograms. It was noted also that the results obtained with the one lamp at the shorter distance supported the evidence of healing of rickets obtained with five lamps at approximately twice the distance, rejected in the preceding consideration of this lamp.

In the meantime the Council in cooperation with its consultants and referees gave careful consideration to the specifications for acceptance of sunlamps. They agreed that the present specifications of intensities for acceptance of ultraviolet lamps for use by physicians and sunlamps sold for use by the laity, are fair and reasonable and require no revision.

In the opinion of the Council, the biologic data submitted indicate that the antirachitic potency of the radiation from the Sperti Sunlamp is very low; as already noted in the physical measurements. The ultraviolet intensity of this lamp does not meet the specifications of the Council for acceptable ultraviolet lamps for home use. Therefore the practicability of the use of the Sperti Sunlamp for the prevention of rickets in children based on these data is not convincing. The Council therefore reaffirmed its previous stand and voted not to include the Sperti Sunlamp in its list of accepted devices.

Council on Pharmacy and Chemistry

NEW AND NONOFFICIAL REMEDIES

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION.

PAUL NICHOLAS LEECH, Secretary.

ACETARSONE-ABBOTT (See New and Nonofficial Remedies, 1936, p. 90).

The following dosage forms have been accepted:

Tablets Acetarsone, 0.05 Gm.
Tablets Acetarsone, 0.1 Gm.

TETANUS TOXOID, ALUM PRECIPITATED (See THE JOURNAL, May 16, 1936, p. 1735; Revised Supplement to New and Nonofficial Remedies, 1936, p. 16).

Eli Lilly and Company, Indianapolis, Ind.

Tetanus Toxoid, Alum Precipitated (Lilly).—Marketed in packages of two 0.5 cc. vials (one immunization treatment); and in packages of one 5 cc. vial (five immunization treatments).

CALCIUM GLUCONATE-ABBOTT (See THE JOURNAL, March 20, 1937, p. 973).

The following dosage form has been accepted:

Tablets Calcium Gluconate-Abbott (Flavored), 1 Gm. (15½ grains).

SALYRGAN (See New and Nonofficial Remedies, 1936, p. 308).

The following dosage form has been accepted:

Suppositories Salyrgan: Each suppository contains salyrgan 0.4 Gm., corn starch 0.1 Gm., and cocoa butter 1.3 Gm.

DEXTROSE (See New and Nonofficial Remedies, 1936, p. 290).

The following dosage forms have been accepted:

The Sterisol Ampoule Corporation, Long Island City, N. Y.

Sterisol Ampoule Dextrose 2½% in Physiological Solution of Sodium Chloride: A solution containing in each 100 cc. 2.5 Gm. of anhydrous dextrose and 0.85 Gm. of sodium chloride. Supplied in ampules containing 250, 500 and 1,000 cc.

Sterisol Ampoule Dextrose 10% in Physiological Solution of Sodium Chloride: A solution containing in each 100 cc. 10 Gm. of anhydrous dextrose and 0.85 Gm. of sodium chloride. Supplied in ampules containing 250, 500 and 1,000 cc.

Sterisol Ampoule Dextrose 20% in Physiological Solution of Sodium Chloride: A solution containing in each 100 cc. 20 Gm. of anhydrous dextrose and 0.85 Gm. of sodium chloride. Supplied in ampules containing 250, 500 and 1,000 cc.

Sterisol Ampoule Dextrose 25% in Physiological Solution of Sodium Chloride: A solution containing in each 100 cc. 25 Gm. of anhydrous dextrose and 0.85 Gm. of sodium chloride. Supplied in ampules containing 250, 500 and 1,000 cc.

Sterisol Ampoule Dextrose 5% in Distilled Water: A solution containing in each 100 cc. 5 Gm. of anhydrous dextrose. Supplied in ampules containing 250, 500 and 1,000 cc.

Sterisol Ampoule Dextrose 10% in Distilled Water: A solution containing in each 100 cc. 10 Gm. of anhydrous dextrose. Supplied in ampules containing 250, 500 and 1,000 cc.

Sterisol Ampoule Dextrose 20% in Distilled Water: A solution containing in each 100 cc. 20 Gm. of anhydrous dextrose. Supplied in ampules containing 250, 500 and 1,000 cc.

Sterisol Ampoule Dextrose 25% in Distilled Water: A solution containing in each 100 cc. 25 Gm. of anhydrous dextrose. Supplied in ampules containing 250, 500 and 1,000 cc.

Council on Foods

ACCEPTED FOODS

THE FOLLOWING PRODUCTS HAVE BEEN ACCEPTED BY THE COUNCIL ON FOODS OF THE AMERICAN MEDICAL ASSOCIATION AND WILL BE LISTED IN THE BOOK OF ACCEPTED FOODS TO BE PUBLISHED.

FRANKLIN C. BING, Secretary.

HERSHEY'S BRAND CHOCLATIER

Manufacturer.—Hershey Chocolate Corporation, Hershey, Pa.

Description.—Powdered mixture of chocolate liquor, roasted cacao beans, powdered skim milk and pulverized cane sugar.

Manufacture.—Skim milk powder, chocolate liquor and pulverized cane sugar are mixed, cooled, sieved and automatically packed in glassine envelops, which are mechanically sealed and packed in boxes.

Analysis (submitted by manufacturer).—Moisture 1.1%, ash 2.9%, ash insoluble in water 1.9%, ash insoluble in acid 0.02%, fat 16.0%, cacao fat 15.9%, milk fat 0.1%, protein (noncaffeine and nontheobromine N × 6.25) 13.6%, sucrose 42.8%, lactose 14.4%, skim milk solids 27.4%, crude fiber 0.8%, carbohydrates other than crude fiber (by difference) 65.6%, * theobromine 0.4%, * caffeine 0.03%.

Moisture-free, fat-free and sugar-free, milk solids free basis—ash 6.3%, ash insoluble in acid 0.2%, crude fiber 6.2%.

Calories.—4.60 per gram; 131 per ounce; 196.5 per envelop (1½ ounces).

* By Prochnow's Modification of the Beckurts-Fromme method, *Arch. d. Pharmaz.* **247:** 698, 1910.

SEXTON BRAND GRAPEFRUIT, WATER PACKED

Manufacturer.—John Sexton & Company, Chicago.

Description.—Canned grapefruit, packed in water.

Manufacture.—Grapefruits are steam heated, hand peeled, subjected to alkali bath, water sprayed and dipped in cold water. Sections are removed by hand, seeded and placed in cans to which water has been added. Cans are exhausted, sealed and processed.

Analysis (submitted by manufacturer).—(Analysis of entire contents including liquid): moisture 91.4%, total solids 8.6%, ash 0.34%, fat (ether extract) 0.2%, protein (N × 6.25) 0.6%, crude fiber 0.14%, carbohydrates other than crude fiber (by difference) 7.4%.

Calories.—0.33 per gram; 9 per ounce.

Claims of Manufacturer.—For diets in which sweetened fruit is proscribed.

LOUELLA BUTTER

Distributor.—American Stores Company, Philadelphia.

Description.—Packaged, salted, pasteurized butter scoring 92 points or over by U. S. Department of Agriculture standards.

Manufacture.—Cream produced by tuberculin tested cows is delivered four times weekly and inspected for cleanliness, flavor, odor and acidity. The cream is pasteurized, cooled, strained and churned. The butter is washed with cool water, salted, tested for moisture, printed into blocks, cooled, wrapped and packed.

Analysis (submitted by manufacturer).—Moisture 15.9%, total solids 84.1%, milk fat 80.7%, curd 0.7%, sodium chloride (NaCl) 2.6%.

Calories.—7.26 per gram; 206 per ounce.

STANDBY BRAND TOMATO JUICE

Distributor.—Fine Foods, Inc., Seattle and Minneapolis.

Packer.—Vincennes Packing Corporation, Vincennes, Ind.

Description.—Pasteurized tomato juice with added salt: retains in high degree the vitamin content of the raw juice; the same as Alice of Old Vincennes Tomato Juice (THE JOURNAL, Feb. 20, 1932, p. 640).

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SATURDAY, MAY 15, 1937

CANCER OF THE LUNG

Cancer of the lung seems unmistakably to be steadily increasing in frequency. This increase, both relative and absolute, cannot be explained as being solely due to improvement in diagnostic technic and to more careful postmortem studies. Accurate descriptions may be found in the writings of Rokitansky, Virchow, Laënnec, Graves and many others. Whereas older clinicians regarded it as rare, it has in the past two decades come to occupy a place second in importance only to such common localizations of malignant growths as the stomach, the uterus and the rectum. This fact has been emphasized in England, in the United States and to an even greater degree in central Europe. The incidence, as cited in recent statistical reports, varies between 5 and 10 per cent of all cancers.

Among the contributing factors to this increase, the injurious effects of tobacco smoking, exhaust gases from automobiles, tar on roads and the influenza epidemic of 1918-1919 have been suggested. None of these can be accepted as definitely causative. Arkin and Wagner [1] state that 90 per cent of their patients were chronic smokers. They believe that inhalation of tobacco smoke may be an important factor in producing chronic irritation with epithelial metaplasia in the bronchi or bronchioles. The disease is preponderantly more common in males than in females, about two thirds of all cases occurring between the ages of 40 and 60. Occupation probably does not play an important part and evidence regarding the influence of preexisting pulmonary disease is not convincing. Edwards [2] emphasizes the fact that in a number of his patients the history was peculiarly free from illness in any form. A persistent cough, hemoptysis and thoracic pain of a severe and continuous type, in a man past the age of 40, are highly suggestive of pulmonary cancer. However, many of the cases of pulmonary carcinoma may be without pulmonary symptoms, their earliest manifestations being those of the metastases away from the thoracic cage. Thus, in Arkin and Wagner's series of 135 cases, 51 per cent presented extrapulmonary signs and symptoms and only 49 per cent presented symptoms referable to the pulmonary tissue.

Recent histologic studies of malignant lesions of the lung have demonstrated that most of the round cell, "oat" cell and spindle cell sarcomas of the lung are in reality carcinomas of bronchogenic origin. The majority of the carcinomas of the lung are of the squamous cell type. Tuttle and Womack [3] call attention to the faculty of the bronchial epithelium to change its morphologic characteristics when subjected to trauma or chronic irritation. The hyperplastic and metaplastic changes taking place may in reality be the first step in carcinogenesis. Attractive as this theory seems, it has found little support in clinical facts. Tuttle and Womack themselves state that of the seventy-six cases of primary bronchiectasis in persons of the cancer age seen in the chest service of the Barnes Hospital there has been observed only one patient who subsequently developed bronchogenic carcinoma. Bronchopulmonary carcinoma displays a tendency to give rise to metastases to the liver, bones, spleen, pancreas and, with a characteristic frequency, to the suprarenals and the brain. According to Tuttle and Womack, tumors of the major bronchi give symptoms early, extend more slowly and are more amenable to surgical treatment, while tumors of the minor bronchi and of the periphery of the lung cause fewer early symptoms and are more rapidly fatal.

As with the carcinomas elsewhere, the primary problem is that of early diagnosis. When one considers that x-ray examination of the chest alone is capable of rendering a correct diagnosis of carcinoma in not less than two thirds of all the cases, this problem should not be considered difficult. Bronchoscopic examination in the hands of an expert is valuable not only because it can visualize the tumor within the main bronchus but even more so because of the possibility of obtaining a biopsy specimen. According to Chevalier L. Jackson,[4] bronchoscopic biopsy will be positive in about 75 per cent of the cases of bronchial carcinoma.

The therapeutic possibilities of bronchopulmonary cancer presented a rather hopeless outlook until the recent bold advances of thoracic surgery offered a ray of hope for at least the cases of a localized tumor before metastases have taken place. Most of the pulmonary carcinomas, including the squamous type, are radio-insensitive. Graham [5] states that there is no record in the literature of successful radiotherapy of a single case in which the pathologic evidence has been incontrovertible and in which five year intervals without recurrence have elapsed between the treatment and the time of reporting the case, despite the fact that

1. Arkin, Aaron, and Wagner, D. H.: Primary Carcinoma of the Lung, J. A. M. A. **106**: 587 (Feb. 22) 1936.
2. Edwards, A. T.: Malignant Disease of the Lung, J. Thoracic Surg. **4**: 107 (Dec.) 1934.
3. Tuttle, W. M., and Womack, N. A.: Bronchiogenic Carcinoma: A Classification in Relation to Treatment and Prognosis, J. Thoracic Surg. **4**: 125 (Dec.) 1934.
4. Jackson, C. L.; and Konzelmann, F. W.: Bronchial Carcinoma: Bronchoscopic Biopsy in a Series of Thirty-Two Cases, J. Thoracic Surg. **4**: 165 (Dec.) 1934.
5. Graham, E. A., and Singer, J. J.: Successful Removal of the Entire Lung for Carcinoma of the Bronchus, J. A. M. A. **101**: 1371 (Oct. 28) 1933.

many cases have been treated according to the most modern methods of using both x-rays and radium. There have been cases, however, in which surgical intervention has resulted in amelioration of symptoms as well as in at least temporary cures. These interventions have been principally lobectomies and occasional pneumonectomies. Graham successfully removed at one stage an entire left lung. Overholt [6] removed the entire right lung. While the total number of pneumonectomies is small, probably not over a dozen, the future of the therapy of pulmonary cancer is not utterly hopeless.

RESEARCH IN DEMENTIA PRAECOX

Dementia praecox has been for many years the great unsolved problem in psychiatry. At present institutions for psychotic patients have a population of more than 400,000, and admissions seem to approximate 130,000 more each year. From time to time a glimmer of hope appears with the announcement of a new investigation which opens the path to a better understanding of some of the more serious psychiatric disorders and thereby the possible diminution of the number of patients demanding care. Thus the application of the results secured by Wagner-Jauregg has had a profound effect on the treatment of dementia paralytica. The time is yet too short to say with any certainty what will eventuate from the application of the use of insulin shock in the treatment of dementia praecox.

In a desire to be helpful in this field, where help is so greatly needed, the Supreme Council of the Scottish Rite Masons of the Northern Jurisdiction of the United States appropriated funds to be used in connection with research on dementia praecox. Approximately $100,000 has already been allocated to assist in financing fourteen research projects approved by a scientific advisory committee.[1] As a first step in this work the committee determined to assemble the available medical periodical literature on the subject and to endeavor to correlate this material so as to obtain from the analysis suggestions or indications as to trends that might be useful in allocating additional funds for research. Unfortunately, this compilation of the available material seems to indicate a rather sterile past and does not apparently offer much in the way of indications as to logical opportunities for investigation in the future. This, in fact, would seem to be the conclusion reached by Prof. Nolan D. C. Lewis,[2] since his final statement of conclusions indicates that the extensive work of the past and the thousands of articles that have been published yield little immediately applicable in the handling of the problem of dementia praecox. This should not, however, be reason for despair. Certainly it is valuable to know the character of the problem that confronts the investigator and the numerous blind alleys that have been followed by previous investigators.

The next step in the study of dementia praecox would seem to be an earnest taking of stock by those in whose hands the solution of the problem has been placed and the establishment of a systematic, well organized program of research based on the defining of problems the solution of which may form the basis for further study. The answer to the problem of dementia praecox will not perhaps be found along any single track of investigation. The histologist, the biologist, the student of metabolism, the psychiatrist and the psychoanalyst may each have a phase of this problem, which must be thoroughly studied before a real solution becomes apparent. Conceivably the basis of the disorder lies so deep in genetics that the answer must inevitably be prevention rather than cure. For the program, however, the medical profession may well look to the distinguished committee that has the problem in hand.

6. Overholt, R. H.: The Total Removal of the Right Lung for Carcinoma, J. Thoracic Surg. **4**: 196 (Dec.) 1934.

1. The committee includes Dr. Albert M. Barrett (deceased), medical director, State Psychopathic Hospital, University of Michigan; Mr. H. Edmund Bullis, executive officer, the National Committee for Mental Hygiene, and secretary, Committee on Research; Dr. Clarence M. Hincks, general director, the National Committee for Mental Hygiene; Melvin M. Johnson, LL.D., Most Puissant Sovereign Grand Commander of the Supreme Council 33° A.·. A.·. Scottish Rite (Northern Masonic Jurisdiction, U. S. A.); Dr. Adolf Meyer, professor of psychiatry at Johns Hopkins University and director of the Phipps Psychiatric Clinic, Johns Hopkins Hospital; Dr. Winfred Overholser, former commissioner, Massachusetts Department of Mental Diseases; Dr. Arthur H. Ruggles, president, the National Committee for Mental Hygiene; Dr. Edward Strecker, professor of psychiatry, University of Pennsylvania and chief of service and consultant, Institute for Mental Hygiene of the Pennsylvania Hospital, and Dr. William A. White (deceased), superintendent, St. Elizabeth's Hospital, Washington, D. C.

ANTIHEMORRHAGIC FACTOR IN FOODS

A new vitamin-like substance is apparently in process of gradual evolvement. Its qualities are antihemorrhagic and tentatively it is called vitamin K. The substance is found in association with vitamin C (cevitamic acid) and can be separated from it. It is also obtained in relative abundance from alfalfa. Its structure is said to be complex; in concentrated form it is a colorless, unsaturated compound unstable to alcoholic alkalis even in the absence of air. Color tests indicate the presence of the indole nucleus, and analyses show a small nitrogen content with no trace of sulfur or phosphorus.[1]

The experimental data concerning this vitamin are derived for the most part from investigations on the chick. Szent-György [2] found striking differences between chicks made scorbutic by dietary deficiency which were given this vitamin and those which were not. The latter were shorter lived, lost more weight, had more fragile bones and showed more hemorrhages into the joints, intestine and muscles. These differences, Szent-György believed, were largely due to a specific influence on the capillary system.

Dam, Schønheyder and Lewis [3] worked with ducklings, geese, pigeons and canaries; also with dogs, rats,

2. Lewis, Nolan D. C.: Research in Dementia Praecox, National Committee for Mental Hygiene, New York.

1. Almquist, H. J.: Chemical and Physical Studies of the Antihemorrhagic Vitamin, J. Biol Chem. **117**: 517 (Feb.) 1937.

2. Bentsáth, A.; Rusznyák, S., and Szent-Györgyi, A.: Vitamin Nature of Flavones, Nature **138**: 798 (Nov. 7) 1936.

3. Dam, Henrik; Schønheyder, Fritz, and Lewis, Liese: The Requirement for Vitamin K of Some Different Species of Animals, Biochem. J. **31**: 22 (Jan.) 1937.

guinea-pigs, rabbits and pigs. They studied the changes in clotting time of the blood from these animals following administration of the new factor under experimentally controlled conditions. Chicks and ducklings showed definite, positive responses, pigeons and canaries less. The results in mammals were inconclusive. The hemorrhagic diathesis produced in dogs by prolonged inanition they did not believe due to lack of this factor. They felt that the ability to dispense with it might be explained by lack of physiologic need for it in some species, by possible animal synthesis of the vitamin, or by synthesis of the vitamin by intestinal bacteria.

No real correlation to hemorrhagic diseases in man has as yet been adduced. However, hemophilia, scurvy and purpura offer fertile fields for research. In hemophilia the deficient functioning of the thrombocytes was pointed out earlier by Howell and Cekada, supplementing Howell's earlier theory regarding the rôle of prothrombin in blood clotting. The latter view was supported by the recent work of Patek and Taylor.[4] In "vitamin K" avitaminosis it is prothrombin that is virtually absent, and the possible relationship between the two is of considerable interest.

Dam and his associates observed no beneficial effects from use of this factor in a case of hemophilia. Great caution is indicated in drawing conclusions from human cases of any type showing hemorrhagic symptoms. "Results" have been claimed for the use of everything from bee stings to autohemotherapy. In capable hands the exploration of the possibilities of this new vitamin may lead to the further elucidation of the mystery of the clotting of blood.

Previously, when vitamins were discovered, the tendency became international to name them alphabetically. However, with the further elucidation of vitamins and in particular the vitamin B complex, it becomes evident that this method of nomenclature is unscientific and should be discarded. Instead, the discoverer may well coin a name nontherapeutic in character and indicative of the composition. In line with this, the Council on Pharmacy and Chemistry of the American Medical Association has recently adopted the term riboflavin, which has been suggested by others, in preference to the term lactoflavin for vitamin G. The action of the Council regarding this matter was first referred to biochemists for comment. The Council has at present under consideration a name for pure vitamin B_1; while a number of names have been suggested, an agreement has not yet been reached by the discoverers of the crystalline vitamin B_1 and of synthetic vitamin B_1 with representatives of the Committee on Nomenclature or with the Society of Biological Chemists. The time is not too soon to begin thinking of some suitable scientific appellation for the evolving antihemorrhagic factor tentatively called vitamin K.

4. Patek, A. J., Jr., and Taylor, F. H. L.: The Blood in Hemophilia, Science **84**: 271 (Sept. 18) 1936; Hemophilia: II. Some Properties of a Substance Obtained from Normal Human Plasma Effective in Accelerating the Coagulation of Hemophilic Blood, J. Clin. Investigation **16**: 113 (Jan.) 1937.

Current Comment

THE ARMY MEDICAL LIBRARY AND MUSEUM

In the Army Medical Library and Museum in Washington, D. C., are housed some of the finest collections available in the field of medicine. The library now contains some 400,000 bound and unbound books and approximately 600,000 pamphlets and periodicals. Included in this material are about 450 incunabula of the total 600 in existence. This library and its Index Catalogue have been recognized everywhere as among the greatest of bibliographic facilities in the world. The House of Delegates of the American Medical Association has repeatedly gone on record as favoring a new building to house these invaluable collections. The present building was constructed in 1887 and the contents of both the library and the museum have outgrown their accommodations. Whether the Army Medical Library and Museum building is erected on the site of the Army Medical Center to round out that institution, which includes the Walter Reed General Hospital, the Army Medical, Dental and Veterinary Schools and the Biological Laboratory, or is to adorn one of the beautiful parkways or drives elsewhere in Washington is really not the vital consideration. The need for a new building is pressing. The construction of such a building would give opportunity for modernizing the equipment and making the materials far more available than they are now. It would serve as a monument to medicine in consideration of its services to human welfare.

MORE MEDICAL MISINFORMATION FROM CONSUMER'S RESEARCH

Consumer's Research, which formerly limited its publications largely to the confidential bulletin circulated among its subscribers, now comes forth with *Consumers' Digest,* published by Editor Schlink with a view, no doubt, to reaching a larger audience. An article on "Diet and Common Colds" again emphasizes the inherent fallacy of discussions of medical subjects by untrained writers. This article calls attention to "an important study" by Frederick Hoelzel. Some comments by Hoelzel were reported briefly in *Science* in 1928 when he was a guest investigator in the Department of Physiology of the University of Chicago. He then wrote that observations over a period of years on one subject, himself, suggested a relation between diet and the incidence of colds. Hoelzel had on several occasions practiced periods of fasting. He remained in good health while fasting but invariably contracted a cold when he resumed eating. He reasoned that the diet affected the degree of hydration of the tissues, which in turn was related to susceptibility to colds. High carbohydrate diets increased hydration and susceptibility, and high fat diets decreased both, he thought. Contrary to substantial evidence, Hoelzel suggested that the relative freedom of arctic explorers from colds is due to the decreased carbohydrate intake rather than to the absence of bacteria. In 1934 Hoelzel

wrote "I have abandoned the idea of using a high fat diet, such as I advocated in 1928, for the prevention of colds and nutritional hydration." This second article was ignored by the article in *Consumers' Digest,* which states that a diet consisting of adequate protein with a minimum of carbohydrate "proved to be" the most efficacious in the prevention of colds, while a diet high in carbohydrate with a restricted protein intake was accompanied by difficulty with colds. The recommended diet for the prevention of colds would consist of liberal portions of lean meat, poultry, fish, cheese, eggs and other animal products, with a restricted intake of potatoes, corn, beans, cereal, pastry, candy, syrup, soft drinks, ice cream, sherbet, alcoholic liquors, sweet fruits and—of all things—fruit juices. Again, apparently without adequate consultation with medical authority, and this time even without adequate survey of recently available evidence, Consumer's Research presumes to dispense bad medical advice to its perhaps too trusting readers.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION AND PUBLIC HEALTH.)

CALIFORNIA

Society News.—The San Francisco County Medical Society devoted its April 13 meeting to a symposium on splenic disease at which the speakers were Drs. Stacy R. Mettier, Salvatore P. Lucia, H. Brodie Stephens, Leo Henry Garland and Zera E. Bolin.——Dr. Robert W. Lamson, Los Angeles, addressed the San Diego County Medical Society, April 13, on "Allergy, Its Application in General Practice."

Bust of Dr. Widney.—A bust of Dr. Joseph P. Widney was presented to the library of the Los Angeles County Medical Association, May 11. Dr. Widney, who is 95 years of age, was present at the ceremonies. He was the founder of the College of Medicine of the University of Southern California and dean and professor of medicine on its faculty for many years. He was president of the University of Southern California from 1892 to 1895.

Dr. Hoffmann Lectures on Syphilis.—Dr. Erich Hoffmann, professor of dermatology and syphilology, University of Bonn, Germany, addressed the faculty and students of Stanford University School of Medicine, San Francisco, April 13, on congenital syphilis, and a special meeting of the San Francisco County Medical Society, April 16, on efforts and attainments in the early treatment of syphilis. He addressed the Los Angeles Dermatological Society, April 5, on Spirochaeta pallida and the early investigation of the arsphenamines by Ehrlich; at a special meeting he was elected an honorary member of the society. In San Francisco Dr. Hoffmann was given the "key to the city" by Mayor Rossi and made honorary president of the San Francisco Dermatological Society.

COLORADO

Society News.—Dr. George W. Crile, Cleveland, addressed a joint banquet of the Medical Society of the City and County of Denver and the staff of Children's Hospital, April 6.——The Mesa County Medical Society was addressed in Grand Junction, April 20, by Drs. Edward E. H. Munro on "Intestinal Obstruction"; Guy C. Cary, "Superstition in Treatment of Diseases of the Eye," and Herman C. Graves, "Orthostatic Albuminuria."——Dr. Robert H. Fitzgerald, Leadville, read a paper on "Physiology, Pathology and Treatment of Edema of the Brain" before the Prowers County Medical Society in Lamar, April 6.——At a meeting of the Northwestern Colorado Medical Society in Steamboat Springs, March 25, Dr. William W. Sloan, Mount Harris, discussed the "Roger Anderson Method of Reduction and Treatment of Fractures."

CONNECTICUT

State Medical Meeting at Bridgeport.—The one hundred and forty-fifth annual meeting of the Connecticut State Medical Society will be held at Bridgeport, May 19-20, with headquarters at the Hotel Stratfield and under the presidency of Dr. Daniel C. Patterson, Bridgeport. Included on the program are the following:

Dr. Howard A. Kelly, Baltimore, Reminiscences in the Development of Gynecology.
Dr. Porter P. Vinson, Richmond, Va., Diagnosis and Treatment of Primary Malignant Disease of the Tracheobronchial Tree.
Dr. George Levene, Boston, Value of Roentgenologic Study in the Diagnosis of Heart Disease.
Dr. Elias W. Abramowitz, New York, Eruptions Caused by Commonly Used Drugs.
Dr. Allan K. Poole, New Haven, Conservative Treatment of Syphilis.
Dr. John Homans, Boston, Symptomatology of Surgical Diseases of the Anus and Rectum.
Dr. Charles Sidney Burwell, Boston, Factors in the Treatment of Asymptomatic Period of Heart Disease.
Dr. David Weisberger, Boston, Studies in Vitamin C Content of Blood in Patients with Dental Abnormalities.
Dr. Samuel J. Kopetzky, New York, Clinical Picture of Suppurative Lesions of the Petrosal Pyramid.
Dr. Clyde E. McDannald, New York, Practical Points in Operative Surgery of the Eye.
Dr. Foster Kennedy, New York, The Paranoiac in Court.
Dr. Ralph M. Tovell, Hartford, Preliminary Report on the Reorganization of the Section on Anesthesia, Hartford Hospital.
Dr. Louis S. Goodman, New Haven, Chemical Mediation of Nerve Stimuli.
Dr. Brian C. Sword, New Haven, Analysis of Peridural Anesthesia as Employed at Grace Hospital.

James Rowland Angell, president of Yale University, New Haven, will speak at the annual dinner of the society Wednesday evening. Hon. Meier Steinbrink, justice of the Supreme Court, New York, will address a dinner meeting of the section on neurology and psychiatry on "The Medical Witness." At a luncheon Wednesday, Dr. Catharine Macfarlane, Philadelphia, will discuss "Carcinoma Developing in the Uterus After Irradiation Menopause" before the Women's Medical Society of Connecticut. Thursday afternoon Alexander O. Gettler, Ph.D., New York, will address the Connecticut Medical Examiners Association on "Toxicology in Medical Legal Autopsy" and Dr. Parker Dooley, New York, the Hezekiah Beardsley Pediatric Club on "Bacillary Dysentery in Childhood." A special session of the American Society of Anesthetists will conclude the day's program. The annual secretaries' conference will be held Thursday at a luncheon session.

ILLINOIS

Personal.—Dr. Eli G. Davis, Lewistown, was guest of honor at a dinner, February 15, to celebrate his eighty-fourth birthday.——Dr. Robert R. Smith has resigned as superintendent of the Kankakee State Hospital, Kankakee, to return to private practice, it is reported. Dr. George W. Morrow is acting head of the institution.

Society News.—Dr. Clarence F. G. Brown, Chicago, addressed the Lake County Medical Society, April 12, on medical management of intractable ulcer and medical management of low grade gallbladder disease.—The St. Clair County Medical Society was addressed in Belleville, April 7, by Drs. Duff S. Allen and Cyril M. MacBride, both of St. Louis, on surgical treatment of toxic goiter and borderline goiter conditions respectively. Dr. Willard C. Scrivner addressed the East St. Louis meeting, April 1, on cancer of the uterus.——Constituent societies of the eighth district were addressed, April 7, by Drs. Winston H. Tucker and Paul H. Harmon, both of the state department of public health, and Harold M. Camp, Monmouth, secretary, Illinois State Medical Society, on the social security act.

Chicago

Hospital News.—There is a residency open in physical therapy at Michael Reese Hospital, effective July 1. Applicants must be graduates of class A schools and must have completed their internship. Additional information may be obtained from Dr. Charles O. Molander at the hospital.

Study of Eclampsia Cases.—Dr. Joseph B. De Lee wishes to obtain two or three cases of eclampsia for a motion picture. The patients may be sent to the Chicago Lying-In Hospital, where the physician may continue his own treatment. No charge for hospital care or ambulance will be made.

Branch Society Meetings.—The North Side Branch of the Chicago Medical Society held its annual May party at the Lake Shore Athletic Club, May 6. Dr. Frank P. Thompson showed motion pictures of "An African Hunting Trip." Dr. Reed M. Nesbit, Ann Arbor, discussed "Water Requirements of the Surgical Patient" before the Aux Plaines Branch April 23. At a meeting of the South Chicago Branch, April 27, Dr. Wilber E. Post spoke on "Nephrosis and Nephrotic

Edema." A symposium on low back pain was presented before the Douglas Park Branch, April 20, by Drs. Maurice I. Kaplan, Edward L. Cornell, Edward W. White and Felix M. Jansey.

IOWA

Annual Renewal Fees Due Before June 1.—All licenses to practice medicine and surgery in Iowa expire annually on June 30. To renew such a license a licentiate must make a written application to the state department of health before June 1, enclosing the renewal fee of $1. If a license expires by reason of the licentiate's failure to renew it, it can be reinstated without reexamination only on the recommendation of the state department of health and the payment of the overdue fees.

Central District Meeting. — The annual meeting of the Iowa and Illinois Central District Medical Association will be held at the Outing Club, Davenport, May 27. The following program will be presented: Drs. French K. Hansel, St. Louis, "Allergy"; Walter C. Alvarez, Rochester, Minn. (subject to be announced); Arthur E. Hertzler, Halstead, Kan., "Surgery of the Thyroid," and William W. Bauer, Director, Bureau of Health and Public Instruction, American Medical Association, Chicago, "Popular Beliefs That Are Not So."

University Offers Services of Pediatrician.—The department of pediatrics of the University of Iowa College of Medicine, Iowa City, has placed the services of a staff member, Dr. Mark W. Dick, at the disposal of the speakers' bureau of the state medical society. Dr. Dick will speak before county medical societies on pediatric subjects. At afternoon meetings he will examine any medically crippled child (diabetic and cardiac). For the afternoon meetings the following rules have been formulated: the work will be undertaken only at the request of the county medical society, and under the direction of the family physician, and will be available for children in indigent families only.

KANSAS

Personal. — Dr. Charles E. Vestle, Holton, has been appointed physician for the Kansas state prison at Lansing. ——Dr. Albert G. Smith, Oskaloosa, was guest of honor at a dinner given by the Shawnee County Medical Society at Topeka, April 5, in celebration of his completion of fifty years in the practice of medicine.——Dr. David W. Basham, Wichita, was recently named president emeritus of the Sedgwick County Medical Society, in recognition of his many years of service in the community. Dr. Basham has been in practice in Kansas for fifty-four years. He was president of the society in 1917. —— Dr. Edwin M. Ireland, Coats, has been appointed health officer of Pratt County, succeeding Dr. Charles E. Phillips.——Dr. Theodore W. Weaver has been named mayor of Wichita.

MAINE

The Frederic Henry Gerrish Library. — A circulating library has been created at the Central Maine General Hospital, Lewiston, through a grant of the Bingham Associates in honor of the late Dr. Frederic Henry Gerrish, who was at one time professor of anatomy at Bowdoin College Medical School, Portland. Material in the library, which now contains seventy-five journals together with a large collection of reprints, will be available to all members of the state medical association. Dr. Gerrish received his degree of doctor of medicine from Bowdoin in 1869 and practiced in Portland from 1870 until his death in 1920. He was professor of materia medica and therapeutics until 1882 and professor of surgery from 1905 to 1911. He was president of the Maine Medical Association, 1901-1902, and of the American Therapeutic Society, 1908-1909.

MARYLAND

Personal. — Drs. LeGrange B. Byington, surgeon, U. S. Public Health Service, in charge of the Baltimore Quarantine Station at Curtis Bay, and Dr. Roy R. Jones, passed assistant surgeon of the service, assigned to the division of labor standards of the U. S. Department of Labor, have been appointed members of the advisory committee on sanitation of the Baltimore City Health Department. Dr. Byington will fill the vacancy created when Dr. Harry F. White was transferred from the local quarantine station, according to Baltimore *Health News*.

Dr. Mustard to Succeed Dr. W. H. Park.—Dr. Harry Stoll Mustard, associate professor of public health administration in the School of Hygiene and Public Health, Johns Hopkins University, Baltimore, has been appointed Hermann M. Biggs professor of preventive medicine and director of the laboratories of preventive medicine at New York University College of Medicine, succeeding Dr. William H. Park, who retired last year. Dr. Mustard formerly was connected with the U. S. Public Health Service, and he went to Tennessee in 1924 as director of the child health demonstration of the Commonwealth Fund at Murfreesboro. In 1932 he resigned as director of health education and of child hygiene and public health nursing in the Tennessee State Department of Health to take charge of the newly created public health district in Baltimore, under the auspices of the Rockefeller Foundation and the Johns Hopkins School of Hygiene and Public Health.

MICHIGAN

Annual Clinic at Lansing.—The Ingham County Medical Society held its annual clinic at the Hotel Olds, Lansing, April 29. The following speakers were on the program:

Dr. Francis E. Senear, Chicago, Diagnosis and Treatment of Early Syphilis.
Dr. Joseph L. Miller, Chicago, Treatment of Nephritis.
Dr. Chevalier L. Jackson, Philadelphia, Postoperative Pulmonary Complications.
Dr. Herbert W. Meyer, New York, Excursions into Fields of Surgery.
Dr. Alfred A. Strauss, Chicago, Surgical Treatment of Peptic Ulcer.

Michigan Deaths from Automobile Accidents.—Automobiles were responsible for the deaths of 1,891 persons in Michigan in 1936, setting a new record for this cause of death, according to the state medical journal. This total gave a 13 per cent increase over the rate for 1935, when 1,667 persons were killed. More than 200 persons were killed during each of the last four months of the year, giving an average of at least seven deaths a day, while the highest monthly total, 223, was reported for December.

Annual Joint Concert.—The symphony orchestra and the glee club of the Wayne County Medical Society presented the following program at their annual joint concert in the main auditorium of the Detroit Institute of Art, April 26:

Georges Miquelle, *Conducting*

1. SAINT-SAENS ..... Marche Heroique
2. DEBUSSY ..... En Bateau
   DEBUSSY ..... Minuet
   JARNEFELT ..... Praeludium
3. A.
   (1) PRAYER OF THANKSGIVING ..... Kremser
   (2) THE BELLS OF ST. MARYS
   B.
   (1) OLE MAN RIVER ..... Jerome Kern
   (2) ON THE ROAD TO MANDALAY ..... Oley Speaks

   Marcus Kellerman—*Director*
   Henry Brown, M.D.—*Accompanist*
4. SAINT-SAENS ..... Danse Macabre
5. GOUNOD ..... Ballet of Faust
6. GUION ..... Alley Tunes
7. DVORAK ..... Going Home
   GRIEG ..... Landsighting

   Glee Club and Orchestra
8. BERLIOZ ..... Hungarian March

MINNESOTA

Personal. — Dr. Leo M. Maguire has been appointed in charge of the Fort Snelling Veterans' Administration Facility, succeeding Dr. Warren A. Colton, who has been transferred to Hampton, Va.

State Medical Election.—Dr. James M. Hayes, Minneapolis, was elected president of the Minnesota State Medical Association at its recent annual meeting in St. Paul, to take office Jan. 1, 1938. Drs. William R. McCarthy, St. Paul, and Baxter A. Smith, Crosby, were chosen vice presidents, and Drs. Edward A. Meyerding, St. Paul, and William H. Condit, Minneapolis, were reelected secretary and treasurer respectively. Dr. Meyerding has been secretary since 1924.

Society News. — Dr. Lewis M. Daniel, Minneapolis, addressed the Minnesota Academy of Medicine, recently, in Minneapolis, on "Pneumonic Pathology in the Upper Lung Fields." Dr. Alexander R. Colvin, St. Paul, presented a case report on twenty-eight years of surgical pathologic conditions in one patient.——The Hennepin County Medical Society was addressed in Minneapolis, March 31, by Dr. Albert M. Snell, Rochester, on "Diagnostic Problems in Diseases of the Liver and Biliary Tract." Dr. Henry S. Ruth, Philadelphia, spoke before the society, recently, on "Physiology of Anesthesia," and Charles H. Rogers, Sc.D., dean, University of Minnesota College of Pharmacy, "Interprofessional Relations—Is There a Policy?" ——The Minneapolis Surgical Society was addressed, March 4, by Drs. Arthur A. Zierold on "Closure of Abdominal Wounds" and James M. Hayes, "Advisability of Informing School Children Concerning the Common Symptoms of Appendicitis."

NEW MEXICO

New State Health Officer.—Dr. Edwin B. Godfrey, San Bernardino, Calif., has been appointed state health officer of New Mexico to succeed Dr. John Rosslyn Earp, resigned. Dr. Godfrey was health officer of Santa Fe County for several years before his appointment to a similar position in San Bernardino County. He is 55 years old and was graduated from Miami Medical College, Cincinnati, in 1909. Dr. Earp became state director of health Jan. 1, 1930.

NEW YORK

State Medical Meeting at Rochester.—The one hundred and thirty-first annual meeting of the Medical Society of the State of New York will be held in Rochester, May 24-26, at the Rochester Chamber of Commerce. The scientific sessions will be held Tuesday and Wednesday, with section meetings in the mornings and general sessions in the afternoons. At the general session Tuesday a symposium on "The Relief of Intractable Pain" will be presented by Drs. James C. White, Boston, and Byron P. Stookey and Louis Casamajor, New York. Wednesday there will be a symposium on "The Blood" by Drs. William B. Castle, Boston; Cyrus C. Sturgis, Ann Arbor, Mich., and George H. Whipple, Rochester. Invited guests who will address the sections include:

Dr. Walter R. Campbell, Toronto, Uses of Protamine Zinc Insulin.
Dr. Norman F. Miller, Ann Arbor, Mich., Vesicovaginal Fistulae, Their Cause and Cure.
Dr. Louis K. Diamond, Boston, Iron Deficiency Anemia in Infants and Children.
James B. Hamilton, Ph.D., Albany, Cryptorchidism.

There will be two special sessions, one on regional and general anesthesia and one on physical therapy. In the first the speakers will be Drs. Orville C. King, Philadelphia; Emery A. Rovenstine, New York; Philip D. Woodbridge, Boston, and Wesley Bourne, Westmount, Que. In the second the speakers include Mr. Howard A. Carter, secretary of the Council on Physical Therapy, American Medical Association, Chicago; Drs. Karl Harpuder, New York; Jacob Gutman, Brooklyn; Richard Kovacs, New York, and George G. Martin, Buffalo. Entertainment includes a golf tournament Thursday afternoon at the Oak Hill Country Club, visits to Bausch and Lomb and the Eastman Kodak Company, and the annual banquet at the Chamber of Commerce Tuesday evening. The woman's auxiliary will hold its annual meeting under the presidency of Mrs. John L. Bauer, Brooklyn.

New York City

Sir Henry Dale to Give Harvey Lecture.—Sir Henry H. Dale, director of the National Institute for Medical Research, London, will deliver the eighth Harvey Society Lecture of the current series at the New York Academy of Medicine, May 20, on "Transmission of Nervous Effects by Acetylcholine."

Cornell Alumni Meeting.—The annual "Spring Day" meeting of the Cornell University Medical College Alumni Association was held April 29. Various departments were open to visitors during the day, and in the afternoon a special feature was a symposium on occupational diseases, with the following speakers:

Dr. Paul Reznikoff, Distinction Between Lead Absorption and Lead Poisoning.
Frederick B. Flinn, Ph.D., Obscure Symptoms in Lead Poisoning.
Dr. Niel E. Eckelberry, Acute Carbon Monoxide Poisoning.
Alexander O. Gettler, Ph.D., Importance of Carbon Monoxide Determinations in Forensic Medicine and Disability Claims.

Dr. Anthony J. Lanza presided at the symposium and Dr. William S. Ladd, dean of the medical school, summarized the discussion. A banquet was held at the Biltmore in the evening, at which the speakers were Drs. Livingston Farrand, who retires this year as president of the university; Charles G. Heyd, President of the American Medical Association, and Floyd S. Winslow, Rochester, president of the Medical Society of the State of New York.

One Year Study of Self-Inflicted Deaths.—A comprehensive one year study of self-inflicted deaths in the New York area has been begun by New York University College of Medicine under the direction of Dr. Nathaniel Ross, assistant clinical professor of psychiatry, and under the supervision of Dr. Karl M. Bowman, director of the psychiatric division of the department of hospitals, Dr. Gregory Zilboorg, director of research for the Committee for the Study of Suicide, and Dr. John Wyckoff, dean of the college. Dr. Ross and his staff will have at their command the clinical material at Bellevue Hospital, among whose patients are about 1,500 each year who have attempted to take their own lives. The research group will consist of about fifty psychiatrists and social workers. The Committee for the Study of Suicide was organized in 1936 (THE JOURNAL, Feb. 29, 1936, p. 713) by a group of psychiatrists and other citizens to study the causes of and the contributing factors to suicide, to standardize methods for the treatment and prevention of suicidal drives in both the adult and the adolescent, and to discover any bearing that social crises such as depressions, wars and revolutions may have on suicidal trends. Dr. Gerald R. Jamieson is president; Dr. Henry Alsop Riley, vice president, and Dr. Zilboorg, secretary and director of research.

NORTH CAROLINA

Dr. McBrayer Resigns as State Secretary.—Dr. Louis B. McBrayer, Southern Pines, has resigned as secretary and treasurer of the Medical Society of the State of North Carolina and Dr. Thomas W. M. Long, Roanoke Rapids, has been appointed to succeed him. Dr. McBrayer has been made honorary secretary for life. A native of North Carolina, Dr. McBrayer graduated at the University of Louisville School of Medicine (1889). From 1901 to 1907 he was coroner of Buncombe County, from 1909 to 1914 health officer of Asheville. From 1914 to 1924 he was superintendent of the North Carolina State Sanatorium for the Treatment of Tuberculosis and was active in organizing the fight against tuberculosis in the state. He has been managing director of the North Carolina Tuberculosis Association since 1915. In 1925-1926 he was president of the Southern Conference on Tuberculosis and served as president of the state board of medical examiners from 1908 to 1914. Dr. McBrayer served as president of the state medical society at one time and has been secretary and treasurer for twenty-one years. In appreciation of his service, the society gave a dinner in his honor and presented him with a silver service. Speakers were Drs. Addison G. Brenizer, Charlotte; William H. Smith, Goldsboro; Grady G. Dixon, Ayden, and William M. Coppridge, Durham. Dr. Paul H. Ringer, Asheville, was toastmaster. Dr. Long is a native of North Carolina, took his medical degree at the Medical College of Virginia in 1908 and has practiced in Roanoke Rapids since 1910. He is a former president of the Halifax County Medical Society and of the fourth district society. He was a member of the state board of medical examiners from 1927 to 1932. He has served several terms in the state legislature and has been mayor of Roanoke Rapids.

NORTH DAKOTA

State Medical Meeting at Grand Forks.—The fiftieth annual session of the North Dakota State Medical Association will be held at Grand Forks, May 16-18, under the presidency of Dr. William A. Gerrish, Jamestown. Speakers will include:

Dr. Willard A. Wright, Williston, Treatment of Burns with Demonstration of Rapid Tanning Method by Natural Color Motion Pictures.
Dr. Donald C. Balfour, Rochester, Minn., Problems in the Diagnosis and Treatment of Gastro-Intestinal Hemorrhage.
Dr. Henning M. Berg, Bismarck, Cancer.
Dr. George A. Williamson, St. Paul, Minn., Fractures of the Upper Extremity.
Dr. Edward L. Tuohy, Duluth, Bone Marrow: Its Vital Importance to the Body.
Dr. William H. Long, Fargo, The Management of Nephritis.
Dr. Reuben H. Waldschmidt, Bismarck, Initial Care and Treatment of Accidental Injuries.
Dr. Robert D. Mussey, Rochester, Minn., Course, Conduct and Complications of Pregnancy Among Physicians' Wives.
Dr. John S. Lundy, Rochester, Minn., Anesthesia and Relief of Pain by the General Practitioner.
Dr. Kent E. Darrow, Fargo, Problems in the Diagnosis of Obstruction in the Bowel.
Dr. Reinhold O. Goehl, Grand Forks, Protamine Insulin.

Dr. Tuohy will be the principal speaker at the annual banquet Monday evening. The North Dakota Health Officers' Association will meet Tuesday afternoon. At a luncheon session, Dr. Calvin C. Applewhite, Chicago, U. S. Public Health Service, will discuss "Present Trends in Public Health Administration." In the afternoon the following speakers will participate in a symposium on venereal diseases: Drs. Harry G. Irvine, Minneapolis; Leonard W. Larson, Bismarck; Paul A. O'Leary, Rochester, Minn., and Kenneth F. Maxcy, Minneapolis. Monday afternoon Dr. Arthur E. Smith, Los Angeles, will address the North Dakota Academy of Ophthalmology and Otolaryngology on "Reconstructive and Plastic Oral Surgery."

PENNSYLVANIA

Personal.—Dr. Don Marshall, assistant professor of ophthalmology, University of Michigan Medical School, Ann Arbor, Mich., has been appointed director of the department of ophthalmology at the George F. Geisinger Memorial Hospital, Danville.——Dr. Persis R. S. Robbins, Bradford, has been appointed medical director of McKean County, succeeding Dr. James M. Rodgers, Smethport.——Dr. Jacques P. Gray,

assistant director of public safety, San Francisco, has been appointed health officer of Wilkes-Barre and manager of the Kirby Memorial Health Center.

Philadelphia

Dr. Lange Appointed Professor of Bacteriology.—Dr. Linda B. Lange, associate professor of bacteriology at Johns Hopkins University School of Hygiene and Public Health, has been appointed professor of bacteriology and immunology at the Woman's Medical College of Pennsylvania, effective in July. Dr. Lange was graduated from Johns Hopkins University School of Medicine in 1911, was fellow in pathology at the Rockefeller Institute for Medical Research, New York, 1912-1914, and pathologist at the Howard A. Kelly Hospital, Baltimore, 1914-1915. She was instructor in pathology at the University of Wisconsin Medical School, 1915-1916, and instructor in medicine at Johns Hopkins, 1916-1918.

Pittsburgh

Behavior Clinic in Criminal Courts.—A behavior clinic was established May 1 in the criminal courts of Allegheny County, with Dr. James M. Henninger, Woodville, as chief psychiatrist and Dr. Edward J. Carroll Jr. as assistant. The board of judges of the common pleas court, in announcing the appointments, made the following statement: "By means of this clinic there will be made available to the judges a detailed study that should materially help in the proper administration of justice. It will guarantee a better protection for the public interest and a more humane treatment of those who, by reason of physical or mental disability, should not be treated as the ordinary offender who is making war on society." Judges Ralph H. Smith, James H. Gray and William H. McNaugher make up a permanent committee in charge of the clinic, and the following physicians have been appointed to an advisory committee: Drs. Edward E. Mayer, George Wright and William Shapera. Dr. Henninger, who is the son of Dr. Charles H. Henninger, professor of psychiatry at the University of Pittsburgh School of Medicine, is a graduate of that school and served for two years on the staff of the Torrance State Hospital and a year as psychiatrist at the Allegheny County Home. Dr. Carroll is also a graduate of the University of Pittsburgh and is chief resident in psychiatry at St. Francis Hospital.

SOUTH DAKOTA

State Medical Meeting at Rapid City.—The annual meeting of the South Dakota State Medical Association will be held in Rapid City, May 24-26. Tuesday morning there will be clinics by the following guests: Drs. Albert M. Snell, Rochester, Minn., medical; Myron O. Henry, Minneapolis, orthopedic; Claude F. Dixon, Rochester, surgical, and George E. Robertson, Omaha, pediatric. Wednesday morning has been reserved for a trip to the Black Hills. The South Dakota Academy of Ophthalmology and Otolaryngology will meet, May 25, with the following speakers: Drs. Avery D. Prangen, Rochester, "Diagnosis and Treatment of Strabismus"; Joseph J. Hompes, Lincoln, Neb., "Moot Questions in Cataract Surgery," and Harry B. Stokes, Omaha, "Significance of Chronic Hoarseness."

TENNESSEE

Personal.—Dr. Marion S. Lombard, medical officer in charge of the U. S. Marine Hospital, Memphis, has been transferred to the Marine Hospital at Buffalo. Dr. Edwin H. Carnes, now at the hospital at Key West, Fla., will succeed Dr. Lombard.——Dr. Don C. Peterson, formerly of Austin, Texas, has been appointed health officer of Williamson County to succeed Dr. Robert Knox Galloway, Franklin, resigned.

State Medical Election.—Dr. George C. Williamson, Columbia, was elected president of the Tennessee State Medical Association at the annual meeting in Knoxville, April 13-15. Vice presidents were elected as follows: Drs. Andrew Smith, Knoxville, for East Tennessee; Jack Witherspoon, Nashville, for Middle Tennessee, and Fred K. West, Rossville, for West Tennessee. Dr. Harrison H. Shoulders, Nashville, was reelected secretary-editor.

VIRGINIA

Society News.—The Southwestern Virginia Medical Society held its spring meeting in Pulaski, April 8-9, with Dr. Emil Novak, Baltimore, as the guest speaker, on "The Endocrine Basis of Gynecological Organotherapy."——Dr. William B. Castle, Boston, addressed the Norfolk County Medical Society, Norfolk, March 15, on "Treatment of Anemia from the Standpoint of the General Practitioner."——At the quarterly meeting of the Southside Virginia Medical Society in Franklin, March 9, the speakers included Drs. Paul D. Camp, Richmond, on "Treatment of Congestive Heart Failure"; Otis L. Anderson, Richmond, "Problems of Early Syphilis," and Charles S. Dodd, Petersburg, "Glaucoma and Optic Atrophy."

WEST VIRGINIA

State Medical Meeting May 24-26.—The seventieth annual meeting of the West Virginia State Medical Association will be held in Clarksburg, May 24-26, with headquarters at the Stonewall Jackson Hotel. Guest speakers who will address general and sectional meetings are:

Dr. Dean D. Lewis, Baltimore, Surgical Problems of the Ductless Glands.
Dr. Horton R. Casparis, Nashville, Mental Health of Children; Pediatric Responsibility in Health Education.
Dr. Louis F. Bishop Jr., New York, Prevention of Heart Disease; Fugitive Arrhythmias.
Dr. Ralph M. Waters, Madison, Wis., Toxic Effects of Carbon Dioxide.
Dr. Norris W. Vaux, Philadelphia, Vaginal Bleeding in the Last Trimester of Pregnancy.
Dr. Moses Paulson, Baltimore, Newer Aspects of Gallbladder Disease of Practical Import.
Dr. John Huber Wagner, Pittsburgh, Treatment of Fractures.
Dr. deWayne G. Richey, Pittsburgh, Diagnosis and Treatment of Inflammatory Lesions of the Oropharynx.

Dr. Thomas Parran, surgeon general, U. S. Public Health Service, Washington, D. C., will be the speaker at the annual banquet Wednesday, May 26, at the Waldo Hotel, on "Public Health Control of Syphilis." Several of the guest speakers will address special societies that will meet during the week. These include the West Virginia Heart Association, West Virginia Society of Obstetricians and Gynecologists and the West Virginia Society of Industrial Physicians and Surgeons. Dr. Lester Hollander, Pittsburgh, will be a guest of the latter society, speaking on "Diagnosis and Treatment of Industrial Dermatoses." Dr. Oscar B. Biern, Huntington, will deliver the annual oration in medicine, on "The Value of the Sedimentation Rate in Medicine"; Dr. Benjamin H. Swint, Charleston, the oration in surgery, on "Pain in Abdominal Crisis." Dr. William S. Fulton, Wheeling, will deliver his official address Tuesday evening. The woman's auxiliary will hold its thirteenth annual meeting during the association's meeting. The auxiliary has arranged an exhibit of physicians' hobbies, the first the association has had.

WISCONSIN

Personal.—Dr. Rollin D. Thompson, superintendent of the Wisconsin State Sanatorium, Statesan, recently resigned to become superintendent of a new hospital now nearing completion at Orlando, Fla., it is reported.——Dr. Carl N. Neupert, Janesville, has been appointed assistant state health officer. He succeeds Dr. Ethan B. Pfefferkorn, Oshkosh, who resigned to reenter private practice.——Dr. Robert L. MacCornack, Whitehall, has been appointed a member of the state board of health.——Dr. Willard M. Sonnenburg was elected mayor of Sheboygan for his third term April 6.

Society News.—Dr. Solon Marx White, Minneapolis, among others, addressed the Eau Claire-Dunn-Pepin County Medical Society, recently, in Eau Claire, on "Diagnosis and Management of Acute Myocardial Damage of Vascular Order."——Dr. John E. Gonce Jr., Madison, addressed the Fond du Lac County Medical Society, Fond du Lac, recently, on "Use of Various Serums and Vaccines in the Diagnosis and Treatment of Infectious Diseases."——Dr. Joseph Brennemann, Chicago, gave the Lippitt Memorial Lecture of the Milwaukee County Medical Society, Milwaukee, March 12, on acute abdominal conditions in children.

PHILIPPINE ISLANDS

Society News.—Speakers at a meeting of the Manila Medical Society, January 12, were Drs. Miguel Canizares, on surgery of pulmonary tuberculosis; Walfrido de Leon and Alfredo Pio de Roda, tropical typhus in the Philippines.——Dr. Mariano B. Lara, among others, addressed the Culion Medical Society, January 24, on pseudohemagglutination in leprosy and certain other diseases and its relation to erythrocyte sedimentation.

Personal.—Dr. Leoncio Lopez-Rizal, chief of the administrative division of the bureau of health of the Philippines, retired February 10 after twenty-five years in the government service.——Dr. Antonio G. Sison, recently named dean of the University of the Philippines College of Medicine, has been appointed director also of the school of hygiene and public health. Dr. Hilario Lara was made assistant director. Dr. Carmelo M. Reyes has been appointed chief of clinics and head of the department of gynecology, and Dr. Jose Albert head of a newly created department of clinical studies and research.

GENERAL

Meetings in Atlantic City.—The annual meeting of the Medical Women's National Association will be at the Chalfonte, Atlantic City, June 6-8. Among the speakers will be Drs. Elizabeth Mason Hohl, Los Angeles, on the "Campaign Against Cancer," and Bertha Van Hoosen, Chicago, on "Maternal Mortality." Dr. Mabel M. Akin, Portland, Ore., will be installed as president. —— The board of chancellors of the American College of Radiology will hold its regular annual meeting in Atlantic City, June 8, at Haddon Hall. Dr. Edward L. Jenkinson, 2561 North Clark Street, Chicago, is executive secretary of the college.——Phi Alpha Sigma Medical Fraternity will hold a luncheon meeting in the Fountain Room of the Shelbourne Hotel, Atlantic City, June 9.

American Laryngological Association. — The fifty-ninth annual congress of the American Laryngological Association will be held at the Marlborough-Blenheim, Atlantic City, May 31-June 2. The following, among other speakers, will be on the program:

Dr. Chevalier Jackson, Philadelphia, Benign Tumors of the Larynx.
Dr. Thomas E. Carmody, Denver, Cysts of the Mandible.
Dr. George M. Coates, Philadelphia, Cholesteatoma of the Frontal Sinus.
Dr. Ralph Albert Fenton and Olof Larsell, Ph.D., Portland, Ore., The Defense Mechanisms of the Upper Respiratory Tract.
Dr. John D. Kernan, New York, Use of Helium Oxygen Therapy in Obstructive Lesions of the Air Passages.

The president, Dr. William B. Chamberlin, Cleveland, and his wife will hold an informal reception Monday evening, and the annual banquet will be given Tuesday evening.

Meeting of Otological Society.—The American Otological Society will hold its seventieth annual meeting at the Lido Country Club, Long Beach, Long Island, N. Y., May 27-28. Most of the meeting will be devoted to a symposium on the neural mechanism of hearing, and speakers will include Drs. Moses H. Lurie and Hallowell Davis, Boston; Albert C. Furstenberg, Ann Arbor, Mich.; Samuel T. Orton, New York; Douglas MacFarlan, Philadelphia; Hermon Marshall Taylor, Jacksonville, Fla., and Samuel J. Kopetzky, New York. Dr. Edmund P. Fowler, New York, will deliver his presidential address Thursday afternoon on "The Diagnosis of Diseases of the Neural Mechanism of Hearing by the Aid of Sounds Well Above Threshold." Friday afternoon the speakers will include Dr. Lee W. Dean, Dr. John S. Agar and Lloyd D. Linton, B.S., St. Louis, on "The Effect of Allergic Conditions on the Ear," and Dr. Page Northington, New York, "The Induced Nystagmus After Peripheral Vestibular Lesions in Monkeys."

American Board of Surgery Organized.—In answer to the widespread demand for an agency that will attempt to certify competent surgeons, the American Board of Surgery has recently been organized. This board is a member of the Advisory Board of Medical Specialties, which includes all the boards of certification for the different medical specialties that have been already organized. Since boards were in existence for the certification of practitioners of some of the surgical specialties such as ophthalmology, otolaryngology, obstetrics and gynecology, genito-urinary surgery and orthopedic surgery it is expected that the American Board of Surgery will be responsible for the certification of general surgeons as well as those practicing in the remaining specialized subdivisions of surgery.

Acting on the invitation of the American Surgical Association, the following surgical societies cooperated in the creation of the American Board of Surgery: the American Surgical Association, the Section on Surgery, General and Abdominal, of the American Medical Association, the American College of Surgeons, the Southern Surgical Association, the Western Surgical Association, the Pacific Coast Surgical Association and the New England Surgical Society. The first three of these bodies, which are national in scope, have three representatives on the board. All the other societies have one representative each. The representatives of the cooperating societies are nominated by the society which they represent and on approval of the board shall become members of it. The term of membership on the board will be six years. The following were chosen to represent the cooperating surgical societies:

Dr. Evarts A. Graham, Dr. Arthur W. Elting and Dr. Allen O. Whipple, representing the American Surgical Association.
Dr. Donald Guthrie, Dr. Edwin R. Schmidt and Dr. Harvey B. Stone, representing the American College of Surgeons.
Dr. Fred W. Rankin, Dr. Howard M. Clute and Dr. J. Stewart Rodman, representing the Section on Surgery, General and Abdominal, of the American Medical Association.
Dr. Philemon E. Truesdale, representing the New England Surgical Society.
Dr. Thomas Orr, representing the Western Surgical Association.
Dr. Robert Payne, representing the Southern Surgical Association.
Dr. Thomas Joyce, representing the Pacific Coast Surgical Association.

The following officers were elected: chairman, Dr. Evarts A. Graham; vice chairman, Dr. Allen O. Whipple; secretary-treasurer, Dr. J. Stewart Rodman.

Two groups of candidates are recognized for qualification by the board: (a) those who have already amply demonstrated their fitness as trained specialists in surgery, and (b) those who, having met the general and special requirements exacted by the board, successfully pass its qualifying examination.

The first of these groups, the Founders Group, on invitation by the board will be chosen from (1) professors and associate professors of surgery in approved medical schools in the United States and Canada, (2) those who for fifteen years prior to the board's organization have limited their practice to surgery, and (3) members of the American Surgical Association, the Southern Surgical Association, the Western Surgical Association, the Pacific Coast Surgical Association and the New England Surgical Society, who were in good standing Jan. 9, 1937.

All applications for the Founders Group must be received within two years of the board's organization, Jan. 9, 1937. No candidates will be considered after that date.

Requirements for those to be qualified by examination will be: 1. Graduation from a medical school of the United States or Canada recognized by the Council on Medical Education and Hospitals of the American Medical Association or graduation from an approved foreign school. 2. Completion of an internship of not less than one year in a hospital approved by the same council, or its equivalent in the opinion of the board. 3. Special training: A further period of graduate work of not less than three years devoted to surgery taken in a recognized graduate school of medicine or in a hospital or under the sponsorship accredited by the American Board of Surgery for the training of surgeons. This period of special training shall be of such character that the relation of the basic sciences of anatomy, physiology, pathology, bacteriology and biochemistry is emphasized. Knowledge of these sciences as applied to clinical surgery will be required in the examination. Adequate operative experience in which the candidate has assumed the whole responsibility will be required. An additional period of not less than two years of study or practice in surgery. 4. The candidate must present to the board sufficient evidence of good moral character as to justify it in the belief that he will not engage in fee splitting and other dishonest practices.

The qualifying examination will be divided into two parts: part I, written, and part II, clinical, bedside and practical. The written part, part I, will concern itself with general surgical problems and with the clinical application of the basic sciences of surgery to these problems. This examination will cover a period of three hours each and will be held simultaneously in as many centers as are necessary to accommodate the number of applicants who are eligible. Part II is entirely oral and will also concern itself, in the main, with general surgery and, as stated for part I, clinical application of the basic sciences to the clinical problem represented. In addition to this, in part II an examination will be given to test the candidate's knowledge of operative surgery, x-ray plate interpretation and the principles and application of surgical anesthesia. This examination will be held in as many centers as the board may determine necessary to accommodate the eligible candidates. Reexaminations will be allowed, provided one year shall elapse between examinations.

The fee for group A, the Founders Group, shall be $25. The fee for group B shall be $75, payable as follows: $5 for registration fee, which shall be returned if the candidate is not accepted for examination; $20 for part I, and $50 for part II. The same fee will be required for each reexamination. Once the candidate has become qualified, he will have no further financial obligation to the board.

The board will hold its first examination (part I, written) Sept. 20, 1937. All inquiries concerning applications for this examination should be received by the secretary's office promptly.

Requests for booklets of information, application blanks and other information should be addressed to the secretary, Dr. J. Stewart Rodman, 225 South Fifteenth Street, Philadelphia.

CORRECTIONS

Births in Milwaukee General Hospital.—In the Hospital Number of THE JOURNAL, March 27, page 1118, the number of births in the Milwaukee General Hospital, Milwaukee, should have been reported as 431 instead of 43.

Bovine Tubercle Bacilli and Guinea-Pigs.—In the Paris letter in THE JOURNAL, February 27, page 739, it was said that the guinea-pig is not susceptible to the bovine type of tubercle bacillus. According to a standard textbook on bacteriology, guinea-pigs inoculated with the bovine type of tubercle bacillus die more quickly and show more extensive lesions than those infected with human bacilli. The bovine type is said to be more virulent for all the ordinary laboratory animals than is the human.

Government Services

SPECIAL ARTICLE

MEETINGS OF ADVISORY COMMITTEES ON MATERNAL AND CHILD WELFARE SERVICES UNDER THE SOCIAL SECURITY ACT

The General Advisory Committee on Maternal and Child Welfare Services under the Social Security Act met in Washington, April 7 and 8, to consider progress reports and problems concerning content of programs and policies with respect to the administration of title V of the act. Following an opening session at which Miss Lenroot, chief of the Children's Bureau, gave a short general report of progress, the members of the General Advisory Committee met with the members of four special committees on maternal and child health, services for crippled children, child welfare services, and participation by the public. In each of the special committees, progress reports were presented by the directors of the divisions administering the three parts of the act. Following a full discussion, recommendations were made by each committee to the General Advisory Committee. The reports and recommendations of the special committees can be summarized as follows:

ADVISORY COMMITTEE ON MATERNAL AND CHILD HEALTH

The Committee on Maternal and Child Health received and unanimously adopted recommendations made by the Subcommittee on Maternal Welfare with respect to an extension of the program under title V, part 1, of the Social Security Act and further recommended the submission of the report to the chief of the Children's Bureau for the purpose of taking the steps necessary for the accomplishment of the purposes outlined.

The recommendations of the Subcommittee on Maternal Welfare cover two special aspects of the program; namely, (1) increased and improved maternity care and care of the newborn and (2) a program of training in these fields for physicians and nurses. The recommendations are as follows:

1. Extension of the maternal and child health work begun in 1935 through federal cooperation with the states under the Social Security Act appears to be urgently needed. This requires appropriation of public funds for maternal care, medical and nursing, for all women in need of such care, considering need as including not alone economic but also medical needs and lack or inadequacy of existing facilities.

This extension should include not only provision of increased resources for actual maternal care, including care given locally by general practitioners and nurses, but also expert obstetric and pediatric consultation service in areas where such is not available and hospitalization of emergency and other selected cases. The establishment of such a program would involve adequate provision for three types of service:

(*a*) Care in the home at delivery and during the antepartum and postpartum periods by a qualified physician aided by a public health nurse trained and experienced in maternal care.

(*b*) Delivery care in approved or acceptable hospitals, provided with adequate obstetric and neonatal services and facilities equal to all emergency or complicated cases, for any woman who because of social, medical or economic reasons, or because of inaccessibility of skilled care should be cared for in a hospital.

(*c*) Consultation service by obstetricians and pediatricians to aid general practitioners in their care of mothers and infants.

In the development of such an extended program, the right of the patient to select her own physician should be preserved.

2. It is the opinion of this committee that a center or centers of postgraduate education should be established to teach urban and rural practitioners of medicine and nurses the fundamental principles of complete maternal and infant care.

Having accepted the principle of providing short intramural courses in obstetrics and care of the new-born infant for general practitioners, the committee recommends:

(*a*) That such training positions carry maintenance and necessary traveling expenses.

(*b*) That intramural postgraduate instruction be a special assignment of members of the teaching staffs of medical schools.

3. The committee recognizes the necessity and desirability of cooperation with the national, state and local medical societies in the working out of any plan.

As reasons for the importance of these resolutions on the extension of maternity care and care of the new-born, the report of the Advisory Committee on Maternal and Child Health Services states:

The progress that has been made in the field of maternal and child health can be traced by the mortality rates. The maternal mortality rate has shown but little appreciable decline in this country. Whereas infant mortality has been reduced almost one half during the first year of life, this reduction has occurred almost entirely after the first month. The mortality rates remain practically the same for the first week and for the first month of life.

Only by available and adequate care for the mother during the pregnancy cycle, especially at time of delivery, can the death rate for mother and child be lowered. It is therefore essential that, to bring any further reduction in maternal as well as infant death rates, further development of the program is necessary.

In addition, the Committee on Maternal and Child Health Services adopted the following resolutions for submission to the General Advisory Committee on Maternal and Child Welfare Services:

1. That a special committee be appointed to consider problems in the field of health education.

2. That it would be desirable to have a few complete demonstrations developing and applying available knowledge in the field of nutrition and to use these centers not only as demonstrations but also as areas where training in nutrition might be available to those interested. This should be a coordinated effort of educational, health, welfare and agricultural agencies.

3. That the Children's Bureau appoint an advisory committee on research problems in administration of maternal and child health programs.

In considering the work of the maternal and child health division of the Children's Bureau as reported by the director of the division, the Advisory Committee on Maternal and Child Health Services emphasized the desirability in future planning of having the state bear at least one half the administrative expense of the state maternal and child health program, in order to make an increased amount of federal funds available for local areas. Continued cooperation with the medical profession was endorsed and the importance of solving the problem of cooperation with professional and lay groups was stressed, especially in connection with several states where the success of the program appears to be jeopardized by failure to use the advisory committees.

The committee discussed at some length the importance of studies and investigations of various phases of the maternal and child health program, as, for instance, dental hygiene, nutrition, health education and mental hygiene.

ADVISORY COMMITTEE ON SERVICES FOR CRIPPLED CHILDREN

The meeting of the Committee on Services for Crippled Children, April 7, was the third one since the passage of the Social Security Act. Following the report by the director of the division, the committee was broken up into two groups to consider (1) problems of medical and hospital care and (2) state administrative procedures. The report of the committee as a whole may be summarized as follows:

The committee noted with satisfaction that every state and territory except one has designated an official agency.

The committee reaffirmed and amplified its previous recommendations concerning desirable qualifications of surgeons and other trained personnel to be employed by official agencies. The statement of qualifications and functions of physical therapy technicians prepared for the use of state agencies and approved by the Council on Medical Education and Hospitals of the American Medical Association and the American Physiotherapy Association was accepted as adequate. Reports of progress were given concerning the training of public health nurses and medical social workers to be employed in state programs. The committee reaffirmed its previously stated position regarding the desirability of a definite plan for the continuous education of the state staff as well as improving the qualifications of incompletely trained personnel already employed.

The preliminary studies by the staff of the Children's Bureau concerning fee schedules, hospital rates and other charges were examined by the committee and approved with suggestions as to future studies.

The registration of hospitals by the American Medical Association was recommended as an additional safeguard to desirable standards formerly proposed by this committee.

The committee urged that the Children's Bureau assist state agencies in reviewing the type of care given to individual children in hospitals and reaffirmed its recommendation of the desirability of a flat per diem ward rate exclusive of professional fees and charges for appliances.

The extension of convalescent facilities and after-care services in reducing the duration of hospital care was recommended, and reports were received with respect to standards for convalescent and foster-home care.

The committee reemphasized the need for the establishment and continuous maintenance of an adequate state register of crippled children.

The plan for the classification of crippling conditions to be used by the states was discussed and suggestions made with respect to forms for reporting. The plan proposed is based on the National Conference on Nomenclature of Diseases.

The importance of working agreements with other public and private agencies engaged in providing related services to crippled children in the attainment of satisfactory adjustments leading to social and economic self maintenance was recognized.

The use of state advisory committees as interpretative groups serving the state agency and the community was urged. The use of small sub-

committees serving as advisory groups on technical problems was also recommended.

The committee made additional suggestions for future studies to be conducted by the Children's Bureau, which it was hoped would lead to improvement of services.

In closing, the committee expressed its confidence in the methods of administration used and the policies which have been developed by the Children's Bureau in its services for crippled children.

ADVISORY COMMITTEE ON COMMUNITY CHILD WELFARE SERVICES

The Committee on Community Child Welfare Services met with the staff of the Child Welfare Division of the Children's Bureau on April 7 to hear reports of progress in development of state services for the encouragement and assistance of adequate methods of community welfare organization in areas predominantly rural and other areas of special need and in the development of actual child welfare service programs in such areas.

Representatives of professional and lay groups in the various states have assisted in the development of the initial stages of the child welfare service program. During the next period there is continuing need for such participation. One method is through the use of state and local committees.

The consensus among the members of the advisory committee with regard to the development of such committees was as follows:

1. An informed interest on the part of citizens is essential to insure the development and maintenance of the public program.

2. The methods by which administrators can best reach the public will vary from state to state and from community to community, and may be through formally organized committees or through more informal channels.

3. State committees may be of two kinds:

(*a*) An informal group of technical advisers on whom the administrator calls for advice concerning the professional aspects of the program. This group may be small or large and is not limited as to term of service.

(*b*) A state citizens' committee for the purpose of interpretation and support. Such a committee may not be formally appointed by the department concerned, although its development may be indirectly stimulated by the department.

4. In local areas it is the primary responsibility of the child welfare worker to develop community organization and interest along with technical child welfare services to individual clients. Local groups should be interested in the program on the basis of specific services which they may perform in connection with it. As an outgrowth of interest in such service, certain citizens may be chosen to serve as members of a more formal committee, if that seems desirable.

The Advisory Committee also heard reports of a special committee on training and personnel, which is working with both the Children's Bureau and the Public Assistance Division of the Social Security Board.

SUBCOMMITTEE ON PARTICIPATION OF THE PUBLIC

A subcommittee, which included the members of the General Advisory Committee on Maternal and Child Welfare Services representing citizens' organizations, discussed many problems in the maternal and child welfare programs under the Social Security Act. In its report to the General Advisory Committee, the subcommittee recognized that the program for maternal and child welfare services is dependent on increasing understanding on the part of the public so that adequate support may be given, quality of service maintained and activities extended to reach new groups and new areas. The committee asked the Children's Bureau to make available to the state administrative agencies suggestions as to the composition, use and functions of advisory committees. It was the sense of the committee that, in the appointment of working advisory committees in the states, organizations be selected for representation because of their special activity in the particular field and that all organizations concerned with the various programs be called in conference from time to time by the state agencies concerned. The committee suggested that the various state organizations request the state agencies to issue at stated intervals brief summaries of activities for their use in informing their members of the progress that is being made in the maternal and child welfare programs.

The recommendations of these four special committees were received and endorsed by the General Advisory Committee at its meeting, April 8. The recommendation with respect to the extension of the maternal and child health program under title V, part 1, of the act to include resources for increased and improved maternity care and care of the new-born and a program of training for physicians and nurses was given special consideration and unanimously adopted by the committee.

RECOMMENDATIONS OF THE CONFERENCE OF STATE AND TERRITORIAL HEALTH OFFICERS

The Conference of State and Territorial Health Officers, meeting with the Children's Bureau April 9, unanimously adopted the following report of a joint meeting of the Committee on Maternal and Child Health of the State and Territorial Health Officers and the Child Hygiene Committee of the State and Provincial Health Authorities of North America:

The conference, at its last annual meeting, adopted the committee's recommendations relating to a revised plan for development of maternal and child health programs, local programs, health services, state-wide program, and federal participation with states.

At a joint meeting April 4 the committees considered other timely and necessary steps in our programs of maternal and child health activities and the following recommendations were unanimously adopted:

1. That the Children's Bureau prepare and send a questionnaire relating to present facilities and resources for maternal and child health to the states and territories.

2. That the medical schools of the country be encouraged to provide more adequate instruction in maternal and child care through their obstetric and pediatric departments in order that their graduates may be better prepared to practice preventive as well as curative medicine and render service of such a character that the maternal death rate would be lowered and that further reduction would be made in the infant death rate, and that the assistance and cooperation of the Council on Medical Education and Hospitals of the American Medical Association be enlisted in the furtherance and promotion of this program of better instruction in these schools.

3. That it is necessary to extend the maternal and child health work now being conducted in the states and territories. For the purposes of developing sound procedures in this field, the joint committee recommends that (1) resources be made available so that qualified local practitioners of medicine and qualified nurses be made available for all aspects of maternal care to those women who are unable to secure this service otherwise, and (2) necessary consultation service and emergency hospitalization for these women should also be provided.

Medical leadership is both desirable and necessary, and the right of the patient to choose her own physician should be recognized.

4. That the facilities for postgraduate education for physicians and nurses be extended and that in cooperation with the state medical societies an analysis be made of the causes of maternal deaths in order to demonstrate the need for better obstetric practice.

A report on the progress of the crippled children's program was presented to the Conference of State and Territorial Health Officers by the director of the crippled children's division of the Children's Bureau. The previous recommendations of the State and Territorial Health Officers with regard to services for crippled children were reviewed and the Children's Bureau was requested to prepare a registration card for the optional use of states to aid in developing a uniform system of registration for crippled children.

The members of the Child Hygiene Committee are Drs. Felix J. Underwood, Mississippi, chairman; T. F. Abercrombie, Georgia; P. H. Bartholomew, Nebraska; T. P. Burroughs, New Hampshire; P. S. Campbell, Nova Scotia; G. H. Coombs, Maine; J. D. Dunshee, Idaho; W. B. Grayson, Arkansas; V. K. Harvey, Indiana; Bernard T. McGhie, Ontario; E. G. Morales, Puerto Rico; F. E. Trotter, Hawaii, and Maysil M. Williams, North Dakota.

The members of the Committee on Maternal and Child Health are Drs. Felix J. Underwood, Mississippi, chairman; T. F. Abercrombie, Georgia; Earle G. Brown, Kansas; Henry D. Chadwick, Massachusetts; E. R. Coffey, Washington; J. Rosslyn Earp, New Mexico; R. C. Cleere, Colorado; V. K. Harvey, Indiana, and R. H. Riley, Maryland.

Health in Civilian Conservation Corps

The health of the Civilian Conservation Corps was satisfactory during the past year, according to the annual report of the surgeon general of the U. S. Army for the calendar year 1935 and the fiscal year ended June 30, 1936. The admission rate is higher than that of the regular army, but this is to be expected because of the youth and inexperience of the enrollees, their susceptibility to measles and mumps and the nature of the work in which they are engaged. The mean strength of the corps was about 394,000. There were but 102 cases of typhoid during the calendar year and many of these persons were probably infected before enrolment. There were 360 cases of tuberculosis. By means of the rapid x-ray examination of the chests of applicants for enrolment, recently inaugurated by the army, a rate of 7 per thousand in white men under 30 years of age and 8 per thousand in Negroes was recorded among a group of 7,000 men examined.

Foreign Letters

LONDON

(From Our Regular Correspondent)

April 17, 1937.

The Nutrition of the Nation

In 1935 the minister of health appointed a committee to investigate the diet of the people and to report on any changes that appear desirable in the light of modern advances in the knowledge of nutrition. The committee has now published a report in which it states that this is "the first occasion in history that a comprehensive survey, statistical and physiologic, of the diet of a whole nation has been set on foot by any government." It regards the consumption of a sufficient quantity of milk as the key to proper nutrition. The desirable amount for children is from 1 to 2 pints daily, for expectant or nursing mothers about 2 pints, and for adults about half a pint. Our present national consumption of milk is not half what would correspond to these amounts. "No other single measure would do more to improve the health, development and resistance to disease of the rising generation than a largely increased consumption of safe milk, especially by mothers, children and adolescents." The committee says that recent advances in the science of nutrition have shown that improvements in health and physique can be attained by consumption of adequate amounts of the protective foods. The progressive application of this knowledge has already contributed to general improvement in health and to decline in mortality and in the incidence of deficiency diseases, such as rickets. The greater availability of butter, cheese and fruit and the increased attention given to the nutrition of mothers and children have also played a part. But there is much room for further improvement.

The national diet contains sufficient energy-giving foods for the whole population, and all except a small fraction of the population is obtaining the full amount of calories it requires. It has been computed that the national food supply per annum contains 55,700 thousand million calories, or, allowing for a wastage of 10 per cent, 50,100 thousand million calories, as compared with the estimated net requirements for the population of 44,300 thousand million calories on the basis of the report of the League of Nations Health Organization. The consumption of fat has largely increased in recent years, which suggests that there is no aggregate deficiency, though there may be some deficiency in the diet of the poorest. No shortage of protein has been revealed, but not all protein is of the same nutritional value; the consumption of protein of high nutritional value (meat, fish and dairy products) rises with income. It seems that the national consumption of fruit and vegetables is below the requirements for optimal nutrition. The committee agrees with the technical commission of the League of Nations that sea fish is particularly valuable as a source of good protein, of iodine and other minerals, that herring and mackerel are particularly rich in vitamins A and D, and that the consumption of potatoes (now about 56 ounces a head weekly) should be increased so as to replace some of the sugar and highly milled cereals in ordinary diets.

It is proposed to investigate further the distribution of the national income by income groups, family budget material, and quantitative dietary studies.

Rules for Resident Medical Officers of Hospitals

The British Medical Association has issued a statement of the principles that should guide hospitals in the employment of junior resident medical officers.

1. The junior resident medical officers should devote their whole time to the service of the hospital. 2. Their duties should include the admission and discharge of patients in accordance with the wishes of the responsible medical officer in charge of the case. 3. They may be required to give lectures to nurses or to examine and treat nurses, and in serious cases they should report to the responsible medical officer. 4. They should as soon as possible notify him of the admission of urgent and important cases and of any serious change in the condition of any case. 5. They should not permit any patient, prescription paper or notes to be examined by any one without the sanction of the responsible medical officer and should not furnish any one unconnected with a patient with any information respecting the case without the sanction of the responsible medical officer and the consent of the patient. 6. They should have definitely prescribed periods off duty; for example, two half days a week after 2 p. m. and alternate Saturdays after 11 a. m. They should have a two weeks holiday for every six months of completed service. 7. The responsibility for giving certificates and medical reports and their entitlement or nonentitlement to retain fees for them should be clearly defined in the hospital rules.

Cooperation Between Medical Schools and Psychotherapists Desirable

In a communication to the *Times,* Sir Walter Langdon-Brown, emeritus professor of physic in the University of Cambridge, supports a suggestion advocating closer cooperation between the medical schools and psychotherapists, which he has been advocating for several years. He points out that the ordinary medical student receives more instruction in certifiable mental disease than in the earlier and more amenable forms of such troubles. Such teaching has had from force of circumstances to be confined to outpatient clinics held by psychiatrists, who must feel that their opportunities are restricted and inadequate. Yet as a member of three separate bodies concerned with the revision of the medical curriculum Sir Walter can testify that the urgent need for greater opportunities is freely recognized. He holds that it is of the first importance that from the beginning of his clinical work every medical student should recognize not only the symptoms of "nervous breakdown" but the fact that every illness has its psychologic side. This can be brought about only by the psychiatric department forming an integral part of the general hospital. There can be no doubt as to the benefits such a scheme would bring to national health and happiness.

Charles Coley Choyce

Prof. Charles Coley Choyce, the editor of the well known System of Surgery, who had recently retired from the post of director of the surgical professorial unit of University College Hospital, London, has died at the age of 61 years. Born in Auckland, New Zealand, he graduated B.Sc. in the university of that country and then went to the University of Edinburgh, where he graduated M.B., Ch.B., in 1901. In 1905 he obtained the F.R.C.S. of England and settled in London, where after holding various junior surgical appointments he was elected surgeon to the Seamen's and Great Northern hospitals. He soon established a reputation as a teacher of surgery and in 1911 produced his System of Surgery in three volumes, which was an immediate success. He had all the qualities for such an undertaking—a sound knowledge of surgery, great teaching ability, a good command of English and tact for the management of a corps of eminent contributors. On the outbreak of the war he joined the army and for nearly two years was in charge of the surgical division of the Nineteenth General Hospital. In 1917-1918 he was consulting surgeon to the Egyptian Expeditionary Force with the rank of colonel. After the armistice he was appointed director of the newly formed surgical unit at University College Hospital and professor of surgery in the University of London.

PARIS

(From Our Regular Correspondent)

April 17, 1937.

Diagnosis and Treatment of Cerebral Injuries

At the March 3 meeting of the Académie de chirurgie Dr. Clovis Vincent read a paper on the diagnosis and treatment of cerebral injuries. Dr. Vincent, up to about ten years ago, was one of the leading neurologists in Paris. Since that time he has devoted himself to neurosurgery. His idea was to study the effects of cerebral injury in noting the clinical course following operations for cerebral tumors. By observing from hour to hour the postoperative course, one learns to know when unfavorable symptoms appear. Some patients were reoperated on and thus it was possible to study in the living a number of lesions that may cause death. The most frequent of these are extradural hematoma, serous meningitis, acute ventricular effusion and brain collapse. These conditions may occur singly or associated, with predominance of one lesion. Among the phenomena that surgeons observe as a postoperative complication, three are to be especially borne in mind: cerebral edema, arterial hypertension with cerebral vasodilatation, and acute pulmonary edema. Lesions of the brain stem are much more likely to end fatally than those of the cerebral hemispheres. A mechanism is present, according to Vincent, in the wall of the third ventricle the stimulation or paralysis of which is followed by cerebral edema, especially of the frontal lobe. A clinical observation was cited to confirm this opinion.

There exists in the bulb near the nucleus of origin of the tenth pair of cranial nerves a mechanism that appears, when traumatized, to give rise to generalized hypertension, intense cerebral vasodilatation and acute pulmonary edema. This observation was made by Vincent in operating on the posterior fossa of the skull in several cases of tumor of the cerebellum.

Vomiting, polyuria with polydipsia and often glycosuria as well as a more or less deep sleep were observed in operating near the third ventricle. Patients do not die as the result alone of injury to the centers that govern life directly but also from the dysfunction of various mechanisms which control the systemic as well as interstitial circulation of the brain, which in turn regulates the secretion of the cerebrospinal fluid, consciousness and also the functions of the liver, pancreas and adrenals.

Vincent does not believe that any difference exists between changes due to operative interventions and those following ordinary trauma to the skull and brain. Hence the treatment of the latter, so far as the cranial contents are concerned, can be deduced from observations made in cases in which operations have been performed for nontraumatic lesions, such as tumors, as follows: If the patient is conscious and there are no localizing symptoms, nothing should be done except to put the patient to bed and watch closely, as no one can foretell when serious symptoms may appear. If the patient is comatose when first seen, the gravity of the symptoms, the time elapsed since the accident and the sequence of appearance of the symptoms must be the deciding factors. If the injury is a recent one and the general condition indicates such serious damage to vital nerve centers that the patient can live but a few days, it is advisable to do nothing. If the injury is a recent one and the patient is in a serious condition but there is a history of a free interval without any symptoms, absolute or relative, operation is indicated. If the patient is comatose but the essential vital functions are normal or nearly so, there is no immediate danger and one can wait, meanwhile watching for any symptoms that might call for operative intervention. Such surveillance includes the constant presence of a nurse at the bedside to note, from hour to hour, the pulse, respiration and temperature. Any changes in the ability of the patient to swallow are especially to be noted, as well as loss of consciousness, convulsions, paralysis and urinary incontinence. The attending surgeon himself ought to see the patient at least every six hours. If convulsions of the jacksonian type, followed by a rapidly progressive hemiplegia, appear, these are definite indications for operation. Such symptoms are but rarely observed, so that the more important question is the degree of involvement of the vital centers.

Following a review of the different types of consciousness, Vincent stated that it is the degree of automatic and instinctive consciousness, as well as the manner in which the patient acts during the second stage of deglutition, which enables the surgeon to judge the condition. The respiration can be changed both in quality and in rhythm. The progressive slowing of the pulse rate, as shown on a relatively long curve on the chart, is of much importance. An isolated rise of temperature is of less value than a steadily increasing rise. Unilateral dilatation of the pupil does not necessarily indicate the side on which a hematoma is located. One of the best signs of compression is papillary stasis. Much importance should be attached to the gradual appearance of mental confusion ending in coma. Cerebral edema, developing slowly, also gives rise to progressive inability to swallow, as well as to disturbances of respiration and pulse rate. Cerebral edema is the most common complication of skull fractures. It can be responsible for the coma, even when there is no hemorrhage, but it frequently accompanies these. It can appear so acutely as to cause death within the first twenty-four hours. Usually it appears slowly, preceded by a lucid interval, as in cases of subdural or extradural hematoma.

Owing to the difficulty of diagnosis in certain cases, the author endorsed the suggestion of Petit-Dutaillis, of ventricular puncture during exploration. The information yielded by lumbar puncture is far inferior to that following the use of the Petit-Dutaillis method. In conjunction with the latter, Vincent advises the use of four trephine openings (two frontal and two temporal), which permits obtaining a larger field for inspection of the brain and its coverings as to the presence of hematomas.

TREATMENT OF SKULL INJURIES

Lumbar puncture and intravenous injections of hypotonic or hypertonic solutions are too frequently given without definite indications having been established. In head injuries, lumbar puncture may be a good method of treatment for slight extra-arachnoid meningeal hemorrhages predominantly located at the base of the brain. It is indicated also in diffuse serous meningitis if one is sure that it exists. But lumbar puncture cannot be regarded as a treatment of hematoma, of encysted serous meningitis or of cerebral collapse. Lumbar puncture cannot be considered as adequate when employed alone in edema of the brain. Following an operation for head injuries, Vincent frequently employs hypertonic or hypotonic solutions intravenously. The former are particularly useful after operation for traumatic edema of the brain.

TREATMENT OF HEMATOMAS

A hematoma large enough to give rise to signs of compression ought to be evacuated. Whether its location is extracerebral, subcerebral or intracerebral, a large opening should be made in the skull under local anesthesia. Rupture of a branch of the middle meningeal artery is less frequently the source of a hematoma than is generally taught. A fissured fracture can give rise to as much bleeding. After removal of the clot, preferably by aspiration, the dura is exposed, but a thin layer of coagulated blood is left on the brain. All visible intracranial bleeding is controlled by electrocoagulation, that from the bone edges by wax. Vincent never drains, having found that bleeding recurs as often with as without drainage. If a subdural hematoma is found, the opening should embrace a wide area of the vault of the skull; viz., a part of the frontal,

occipital and temporal regions and all of the parietal. To avoid extending the bone flap too far downward, an incision is made through the lowest point of the exposed dura to see whether the hematoma is continuous with one at the base. The latter constitutes a serious complication and death may occur during the operation. If the hematoma on the exposed surface is of greater duration, from two to three months for example, only the contents of the cyst that has been formed need be evacuated. To avoid secondary hemorrhage, the lateral ventricles, after every operation immediately following injury, should be filled with Ringer's solution. Intracerebral hematomas can be best evacuated by aspiration.

TREATMENT OF CEREBRAL EDEMA OF TRAUMATIC ORIGIN

If the edema involves the hemispheres, the best site for opening the skull is in the right frontal region, extending 4 or 5 cm. to the left beyond the median line. Subtemporal decompression alone is of no help in these cases. The edematous brain must be allowed to expand toward the vault so as to relieve the pressure on the vital structures at the base of the brain. The operation is completed by a subtemporal trephine opening with incision of the dura at its lowest point if there appears much subdural tension. The pedicle for the frontal osteoplastic flap should be in the temporal region. A large opening in the skull decompresses better than one realizes even without incision of the dura. In addition to such a wide frontal decompression procedure, Vincent advises intravenous injections of 15 per cent magnesium sulfate, 4 cc. every three to four hours, and a minimum of 12 mg. of strychnine sulfate in twenty-four hours.

TREATMENT OF COLLAPSE OF THE VENTRICLES

When recognized, Ringer's solution at a temperature of 37 C. (98.4 F.) is injected during operation directly into the lateral ventricles, through a small trocar with blunt ends. One must be sure that no cerebral edema exists; if such is the case, death may ensue immediately after injection of the ventricles.

Transmission to Ferrets of Human Influenza Virus

Reference has already been made to a report by de la Rivière and Cheve, at the Nov. 24, 1936, meeting of the Académie de médecine, showing that ferrets could be infected either with rhinopharyngeal mucus of human beings suffering from influenza or from ferrets previously inoculated. At a recent (February 9) meeting of the same society these investigators reported the results of further experiments. The material for inoculation of ferrets was obtained on the second or third day of an attack of acute influenza. The patients were asked to gargle with 50 cc. of a mixture composed of equal parts of physiologic solution of sodium chloride and bouillon. One half of this solution was used to determine the ordinary flora of the pharyngeal secretions of the patients and the other was filtered (Chamberland L 2). The sterility of the filtrate was controlled by inoculation on various aerobic and anaerobic mediums. No colonies appeared even after a week's incubation. The filtrate was then instilled intranasally in the ferrets and their morning and evening temperatures were recorded. A healthy animal was thus inoculated with the nasal secretion (diluted one fifth to one tenth in physiologic solution of sodium chloride and passed through an L 2 Chamberland filter). Some inoculations were also made by instilling into the nares of a healthy animal a 5 per cent suspension of the pulverized lung of an infected ferret. In both of these types of experiment a typical infection resulted. Throughout their study they found that the inoculation of the filtrate of the rhinopharyngeal secretions from cases of human influenza gave rise to identical manifestations, as had been found in employing a virus obtained from England derived from passage of the virus through mice. The temperature curves of human beings suffering from influenza and inoculated ferrets were identical. A ferret inoculated a month previously with a virus obtained in London, when reinoculated with a filtrate from a recently infected human being, did not present evidences of the disease. A healthy ferret, however, was successfully inoculated with the same London virus, showing that the animal which had been reinoculated was immune.

Treatment of Fractures of the Skull in Children

At the March 3 meeting of the Académie de chirurgie, Clovis Vincent reviewed the symptoms and indications for operative intervention in brain injuries complicating skull fractures in adults. At the following meeting the experience acquired in observing 109 cases of skull fracture in children was the subject of a paper by the Sorrels and Gigon. A neurologic examination in every case had been made by André Thomas. The children varied in age from 3 months to 15 years, the majority of fractures following injuries on the street. Neither the extent of the line of fracture nor the number of its radiations seemed to bear any relation to the gravity of the clinical symptoms. All the classic meningo-encephalitic complications had been observed. The increase in pulse rate is an unfavorable sign, from the standpoint of prognosis. Among the neurologic signs two are of major importance: diminution of muscle tonus and a diminution in the rapidity with which an extremity falls when lifted. Pupillary changes are too inconstant to be of much value. Aside from cases in which operation is imperative (open fracture and intracranial hematoma) and those in which one does not hesitate to operate, there were others in which the question of whether or not to operate was much more difficult to decide. During the first thirty-six to forty-eight hours, if the coma persists and the pulse remains rapid, operation is indicated without delay, even after a temporary apparent improvement, if signs of involvement of nerve centers, mental confusion and a rapidly increasing pulse persist. Fractures of the skull in children are relatively benign, even though serious symptoms are present at the onset. These fractures heal with surprising rapidity, many within one to two weeks. Sequelae are comparatively infrequent (in only 3.5 per cent of the cases) in children. If an operation is performed early, important nerve sequelae are rarely observed.

BERLIN

(From Our Regular Correspondent)

April 14, 1937.

News of the Student Bodies

Since the last report on the faculties and student bodies of German universities (THE JOURNAL, July 4, 1936, p. 50) some further developments have taken place. It is eloquent of the situation that National Minister of Public Instruction Rust recently saw fit to address a public admonition to the university students. Rust declared in his speech that it is not the business of the students to "subject the docents (their own teachers!) to a thorough microscopic examination" for the purpose of "getting rid of them." Every student should make demands, not of others, but of himself. Rust expected not phraseology but accomplishment. In view of present conditions the minister must impose large obligations on students as well as on the research and teaching staffs of the universities.

It is perhaps significant that the whilom fuehrer of the Nazi German Students' League, Derichsweiler, has been deposed. The removal of this quarrelsome bully followed the demands of a vast number of professors who found their scholarly activities cruelly handicapped by the constant feeling of unrest. Two student organizations, the German Studentenschaft and the Nazi Studentenbund, are now united under the common headship of a "National Fuehrer of Students."

Henceforth all new matriculants at a university must register at the headquarters of the local student fuehrer. During the

first three semesters of residence a student will receive "politisch-weltanschaulich" instruction from the Nazi Studentenbund. To facilitate this program of indoctrination it has been decreed that a student must spend the first three semesters at one university. Heretofore a student has been free to transfer from one school to another at the end of any semester, and this flexibility has been a peculiar characteristic of German university life. Every German student shall have the opportunity of joining one of the "kameradschaften" sponsored by the Nazi Studentenbund. Far reaching and explicit regulations govern the conduct of these student organizations. Certain members of the Nazi Studentenbund, such as the Stamm-Mannschaften and the office holders are permitted to wear a distinctive uniform: a black coat under which is worn the brown shirt. A special flag has also been designed. The director of the Culture Bureau of National Student Activities has declared that a new type of campus life should be developed. The new National Socialist university milieu will have to evolve gradually. Planned "sings" and other musical activities, and carefully arranged social evenings may perhaps eventually come to take the place of the old student "kommerse" (the drinking bouts that were a famous feature of German student life). A new students' code of honor has also been created, based on the absolute satisfaction of affronts by the duel. This code, still in process of being drafted, regulates dueling and the use of weapons, with particular reference to saber duels. Affairs of honor will be decided by the saber duel. Since drunkenness is considered unworthy of a German, a student who receives an affront while he is intoxicated has no right to demand satisfaction. If a German student, while under the influence of drink, should offend the honor of a fellow student, the incident must be settled otherwise than by dueling. It will be recollected that after the war the German government prohibited dueling among students. The custom, however, continued to have a desultory clandestine existence and occasionally duelists were actually punished. But in the years just prior to the advent of the present régime the enforcement of the laws against dueling had been extremely lax.

All future students who have completed secondary school and intend to enter a university must first put in a year of labor service. Students unfit for labor service proper must spend the same period in some prescribed equivalent service. Labor service is now compulsory for all the youth of Germany. Exceptions are, however, granted in special cases, especially for youths who contemplate certain technical studies such as aeronautics, ship building, marine engineering and marine electrotechnics. Exemption from labor service is granted in these cases in order to save time, as there is a marked shortage of young technicians in the mentioned fields.

Women who contemplate a university career must also put in a year of labor service. Those who are unfit may perform special duties in the Nazi Social Welfare Service. According to the terms of an agreement between the National Student Administration and the German Red Cross, women medical students must include in their course of study special training for emergency medical service in case of aerial attack. In the first semester the women are trained in the fundamentals of first aid service, in the second semester and during vacations they are trained as Red Cross "Samaritans," and from the third to the seventh semesters they spend their vacations in training as Red Cross assistants. The latter type of training includes three months in a hospital service. After the prelminary examination taken at the end of the fifth semester, the woman medical student is placed on the reserve list for emergency service in case of aerial attack. It is now prescribed by law that a woman student who appears for the state examination in medicine must be certified to have fulfilled the requirements with regard to "medical service in case of aerial attack."

Observations of Divers

Professor Ferdinand Wiethold of Kiel has investigated the changes produced in divers by a too rapid descent into the water. These may be of a dangerous character if they result from lack of air in the diving dress or a careless manipulation of the helmet valves. The increased water pressure decreases the volume of compressible air to such a degree that soon the helmet alone contains air, while the pliable texture of the dress proper permits the garment to become tightened about the entire body by the full force of the hydraulic pressure, which increases according to depth. Any further increase in the water pressure then causes that part of the body which is enveloped in the pliable dress to be under greater pressure than the helmet-protected head, neck and shoulders, the latter parts being subjected to the lesser pressure of the air content. From this state of affairs results (1) mechanical hindering of the respiration, (2) shifting of the blood from those parts of the body which are under unchecked water pressure to those parts which are under lighter pressure due to the protection of the helmet (pressure stasis) and (3) effect of aspiration on the respiratory passages and the lungs.

The pressure stasis and the mechanical hindrance to respiratory movement become dangerous only if present for a long time. The cupping glass effect on the lungs appears to be the most serious factor, as this quickly leads to a hemorrhagic pulmonary edema or even to total hemorrhagic infarction of the lungs. For divers who descend to great depths not at the beginning of submersion but after having breathed the compressed air at a higher level for some time, there is greater danger since the pulmonary alveoli, filled as they are with bloody moisture, lose their ability to eliminate the gases produced. In this way too there arises the danger of decompression injury. The foregoing observations are based on actual clinical and postmortem study of deep sea divers as well as on animal experimentation.

Progress with Asocial Venereal Disease Patients

In central Germany (Thuringia) a detention unit for asocial female patients afflicted with venereal diseases was created by the ministry after the way had been prepared by appropriate legislation. Data based on the eighteen months existence of this department are now available. Duration of internment depends on former behavior, the number of infections suffered, the previous expenses, the home surroundings and the social prognosis; the last named is determined by an attending psychiatrist. The behavior of these asocial persons during internment is also taken into consideration. The patients are treated until cured at the dermatologic clinic of the University of Jena. If a patient exhibits no further clinical manifestations, she is subjected to rigorous work therapy. When a youthful patient is released, an effort is made to reunite her with her family. For older patients and those without family, a placement bureau finds employment. If a job is found for a former patient, it must not be relinquished and a follow up is maintained by social welfare agencies. According to the data, some of the asocial women for whom employment was found relapsed into loose conduct. Against such persons rigorous measures, notably prolonged detention, were instituted. The method followed by this unit has shown itself to be well worth while and its wider application is to be recommended.

Better Food for Young Workers

The National Ministry of Labor has issued regulations which seek to guarantee suitable nourishment during working hours for growing youths employed in industry. The concentration of the working hours into the strictest possible limits with only brief pauses, a situation that has become increasingly prevalent in the cities, makes it generally impossible for the young worker to take his midday meal at home. Although some employers

are accustomed to provide their employees with warm, nourishing and inexpensive meals, this is by no means a universal custom. The new regulations provide that all industries, the lesser as well as the greater, must furnish at least a bowl of hot soup to the youthful worker during the noon recess. It is pointed out that this plan will be of benefit to the employer as well as the employee, since the better nourished worker will do better work. The inspectors from the Industrial Supervision Authority will see to it that the new regulations are observed, especially with respect to the furnishing of soup or other warm food to workers under the age of 18.

BUCHAREST

(From Our Regular Correspondent)

March 25, 1937.

Atypical Forms of Neurosyphilis

At a recent meeting of the medical society, Professor Paulian stated that syphilis, when localized, may produce symptoms simulating those of lethargic encephalitis. The symptoms of epidemic encephalitis, accompanied by the diagnostic signs of neurosyphilis may often be recognized. Of these, anisocoric pupils and the Argyll Robertson sign take first rank. These two manifestations, however, are constant in only three fourths of the cases and neither is pathognomonic. Thus absolute diagnosis cannot be made on symptoms alone, but the complete examination of the spinal fluid is imperative.

The pathologic picture described by Claude and Lhermitte under the syndrome of the infundibulum may be caused not only by syphilis but also by encephalitis or neoplasms. Another interesting localization is the dysphagic form of neurosyphilis, described by Professor Bacaloglu of Bucharest University. In cases of this nature the patient has to be fed with a tube and cannot swallow solid or liquid foods. Specific infections of the small brain may mimic tumors so much that these patients are subjected to operation. So-called essential epilepsy may be estimated to be of heredosyphilitic nature in about 16 per cent.

The evolution of the clinical manifestations of neurosyphilis requires from six to fifteen years. In this way there exists a latent period, which is revealed only by the analysis of the spinal fluid. Lumbar puncture should be made in every case of syphilitic infection. By doing so, efficacious prophylactic measures against the outbreak of neurosyphilis may be taken. If the spinal fluid is tested only when the presence of neurosyphilis is suspected, the advantages of the treatment during the latent and preclinical stages are missed.

According to a law recently passed by the national assembly and the senate, the military service required of young physicians has been extended to twelve months. This period was formerly of two months' duration. Of the twelve months the first two is devoted to military training. The next eight months service is placed at the disposal of the minister of health, during which time the young physicians are assigned to medical service in villages. The remainder of the time is again devoted to the army during the grand maneuvers. In this way the minister of public health hopes to improve the medical service in the villages.

Scarlet Fever Peritonitis

Dr. Gavrila, lecturer to the University of Bucharest, describes three cases of scarlet fever in which primary, acute, purulent, generalized streptococcic peritonitis occurred. The first patient, a girl aged 13, had a mild scarlatina, and on the twenty-second day, during normal convalescence, a purulent peritonitis set in. Immediate surgical intervention failed to save her life. The second patient, a boy aged 12, had acute peritonitis on the twenty-fourth day of a severe septic scarlet fever. Surgical intervention here also was ineffective. The third patient had purulent peritonitis on the eleventh day of septic scarlet fever. The patient died without surgical intervention. In all three cases hemolytic streptococci could be cultivated from the abdominal pus. Internal treatment is usual in such cases, but of Sabadini's twelve patients treated internally ten died, while of the eight treated surgically, four survived.

International Congress of Military Medicine

The ninth International Congress of Military Medicine and Pharmacy will be held in Bucharest June 2-10, under the patronage of King Carol. The aims of the congress are (1) to study methods and more practical therapeutic and prophylactic measures in the handling and treatment of the wounded and sick, (2) to maintain and foster good professional relations between the sanitary officers of different nations and (3) to advance suitable methods for the humanization of warfare, by international cooperation. Such congresses have been held at Brussels, Rome, Warsaw, Paris, London, The Hague and Madrid. The committee entrusted with the organization of the congress consists of civil and military medical members, headed by Dr. Iliescu, the surgeon general. The scientific program comprises five problems: 1. The organization and establishment of the activity of the sanitary service in operation in the field and on the sea: England and the United States. 2. The transport, hospitalization and treatment of those wounded by gas: Germany and Yugoslavia. 3. The organization and the function of the surgical service with the motorized troops. 4. The use of the different colorimetric analyses in the laboratory: Switzerland and Japan. 5. Comparative study of the feeding of sick and wounded soldiers in war and peace: France and Turkey. The papers will be published in one of the official languages of the congress: English, French, German, Italian or Spanish. All papers intended to be read at the congress must be addressed to the general secretariat. Membership in the congress, besides the delegates of the respective governments, may include any physician, pharmacist, dentist, veterinary surgeon or administrative officer attached to the territorial, naval or aviation military services. The registration fee to be paid by all who attend is 1,000 lei ($7.50) for men and 600 lei for women and children. This fee entitles all members to receive the official publications and to partake of all festivities in connection with the congress. Information may be obtained from the Secretariat General, Bucharest II, Institutal Sanitar Militar, Rumania.

Experience with Suboccipital Puncture.

More than 400 suboccipital punctures have been performed by Dr. Maior. This experience has led him to state that the puncture of the cerebellomedullary cistern is without danger when done with adequate precaution and with dexterous hands. From the point of view of outpatient clinics, this method has the advantage of allowing patients to pursue their daily work immediately after the puncture. The timely neurolocalization of syphilis thus effected permits early adequate treatment and a considerable reduction in the number of paralytic and tabetic patients.

Marriages

EVERETT TWEED ALEXANDER, Barnsdall, Okla., to Miss R. Catharine Stephens of Independence, Mo., January 10.

JAMES MARTIN HABEL JR., Richmond, Va., to Miss Allie Bryant Blue of Southern Pines, N. C., March 27.

EDWIN DARRACOTT VAUGHAN, Ashland, Va., to Miss Blanche Van Doran Bashaw of Richmond, April 3.

JOHN HAMILTON SCHERER to Miss Jessie Lee Swisher, both of Richmond, Va., March 29.

SAMUEL HOWARD GARST to Miss Julia Virginia Barber, both of Staunton, Va., April 14.

HERMAN H. HINES, Clinchco, Va., to Miss Dorothy May London in March.

Deaths

George Henry Fox ⊕ an Affiliate Fellow of the American Medical Association, father of Dr. Howard Fox, New York, died, May 3, at his home in New York, aged 90, of heart disease. Dr. Fox was born in Ballston Spa, N. Y., Oct. 8, 1846. He was educated at the University of Rochester and received a medical degree from the University of Pennsylvania Department of Medicine in Philadelphia in 1869. After three years of study in Leipzig, Berlin, Vienna, London and Paris, he began practice in New York in 1873. From 1875 to 1879 he was clinical professor of diseases of the skin at the Woman's Medical College of the New York Infirmary and in the latter year went to Starling Medical College, Columbus, Ohio, as clinical professor of diseases of the skin. Two years later he became clinical professor of diseases of the skin and later professor of dermatology at Columbia University College of Physicians and Surgeons, remaining there until 1907. In addition he served as professor of diseases of the skin at the New York Post-Graduate Medical School and Hospital from 1890 to 1895. Dr. Fox was one of six founders of the American Dermatological Association in 1876 and in 1925 was made honorary president. In 1891 he was president of the Medical Society of the County of New York and in 1894 of the Medical Society of the State of New York. He was a member of the American Academy of Medicine and the Royal Society of Medicine of Great Britain. At one time he was consulting dermatologist to the board of health of New York and attending physician to the New York Skin and Cancer Hospital. Dr. Fox and three brothers served in the Civil War. He was the author of photographic atlases on diseases of the skin, a book entitled "Skin Diseases in Children," and "The Lineage of One Hundred American Physicians Named Fox."

Elias Potter Lyon, Minneapolis, for twenty-three years professor of physiology and dean of the University of Minnesota Medical School, Minneapolis, died suddenly, May 4, aged 69, at Trafford, Pa., while returning from a vacation in Florida. Dr. Lyon was born in Cambria, Mich., Oct. 20, 1867. He graduated from Hillsdale College in Michigan and received the doctor of philosophy degree from the University of Chicago in 1897. St. Louis University conferred on him the degrees of doctor of medicine in 1910 and doctor of laws in 1920. He taught at Hillsdale College, Harvard School, Chicago, and Bradley Polytechnic Institute, Peoria, Ill. He was assistant professor of physiology at Rush Medical College from 1900 to 1904 and was assistant professor of physiology and assistant dean at the University of Chicago from 1901 to 1904. He was professor of physiology at St. Louis University School of Medicine from 1904 to 1913 and dean from 1907 to 1913, when he went to the University of Minnesota Medical School as professor of physiology and dean. In 1894 he served as biologist of the Cook Greenland expedition, from 1908 to 1911 investigator for the United States Bureau of Fisheries and investigator during various summers for the Marine Biological Laboratory, Woods Hole, Mass. In 1925 Dr. Lyon was a trustee of the Hillsdale College. He was an associate member of the Minnesota State Medical Association, a fellow of the American Association for the Advancement of Science, and a member of the American Physiological Society and the Society of Experimental Biology and Medicine. He was chairman of the Section on Pathology and Physiology of the American Medical Association in 1934 and 1935 and president of the Association of American Medical Colleges in 1913 and 1914. In 1936 the Elias Potter Lyon Lectureship was established in his honor at the University of Minnesota.

Daniel Paul O'Brien, New Bedford, Mass.; Harvard University Medical School, Boston, 1904; member of the Massachusetts Medical Society and the New England Surgical Society; fellow of the American College of Surgeons; served during the World War; at one time medical inspector in the public schools; visiting surgeon to St. Luke's Hospital and St. Mary's Orphans' Home; for many years medical examiner for the Fourth Bristol District; aged 59; died, February 27, in the Lawrence and Memorial Associated Hospitals, New London, Conn., of cerebral hemorrhage.

Clarence Henry Westgate, Morenci, Mich.; Detroit College of Medicine, 1902; member of the Michigan State Medical Society; past president and secretary of the Lenawee County Medical Society; was secretary of the board of education of Morenci; medical director of the Lenawee County Tuberculosis Sanatorium, Adrian; on the visiting staff of the Detwiler Memorial Hospital, Wauseon, Ohio; on the staff of the Emma L. Bixby Hospital, Adrian; aged 56; died, February 27, of heart disease.

Henry Stevens Tucker ⊕ Chicago; Bennett Medical College, Chicago, 1879; demonstrator of anatomy at his alma mater, 1879-1883; professor of surgery, attending and consulting physician to the Bennett College Hospital, 1889-1900; dean and professor of surgical gynecology at the Chicago College of Medicine and Surgery, 1902-1914; for six years attending surgeon to the Cook County Hospital; aged 83; died, April 21, of edema of the lungs, chronic myocarditis and essential hypertension.

James Edmond Coleman ⊕ Canton, Ill.; Rush Medical College, Chicago, 1884; past president of the Fulton County Medical Society; fellow of the American College of Surgeons; member, and at one time president, of the board of education; served as volunteer in the American Medical Service Corps during the World War; aged 74; for many years chief surgeon to the Graham Hospital, where he died, March 30, following an appendectomy.

Franklin Uriah Painter, Corpus Christi, Texas; Memphis (Tenn.) Hospital Medical College, 1892; member and vice president, 1917-1918, of the State Medical Association of Texas and councilor of the Sixth District, 1919-1925; fellow of the American College of Surgeons; past president of the Nueces County Medical Society; chief of the surgical staff of the Fred Roberts Memorial Hospital; aged 74; died, suddenly February 4, of heart disease.

Orval James Cunningham, East Cleveland, Ohio; Rush Medical College, Chicago, 1904; member of the Associated Anesthetists of the United States and Canada; formerly associate professor of surgery (anesthesia), University of Kansas School of Medicine, Kansas City; for many years on the staff of the Bell Memorial Hospital, Kansas City, Kan.; aged 57; died, February 23, in the Lakeside Hospital, Cleveland, of cerebral thrombosis.

Harold Bunce Myers ⊕ Portland, Ore.; Western Reserve University Medical Department, Cleveland, 1911; associate dean and professor of pharmacology, University of Oregon Medical School; member of the Associated Anesthetists of the United States and Canada; fellow of the American College of Physicians; on the staff of the Multnomah Hospital; aged 50; died, March 16, in St. Vincent's Hospital, of coronary thrombosis.

William Charles Schroeder, Baltimore; University of Virginia Department of Medicine, Charlottesville, 1899; formerly connected with the U. S. Public Health Service; at one time superintendent of the Municipal Sanatorium, Otisville, N. Y., and the Delaware County Tuberculosis Sanatorium, Delhi, N. Y.; aged 61; died, February 18, of coronary occlusion and chronic nephritis.

Arthur Romanzo Weed, New Haven, Conn.; University of Vermont College of Medicine, Burlington, 1912; member of the Connecticut State Medical Society; served during the World War; on the staffs of the New Haven Hospital and the Grace Hospital; aged 54; died, February 7, in Phoenix, Ariz., of arteriosclerosis and nephritis.

Orr L. Perry, Elkins, W. Va.; College of Physicians and Surgeons, Baltimore, 1891; member of the West Virginia State Medical Association; past president of the Barbour-Randolph-Tucker County Medical Society; county public school physician; formerly city health officer; aged 75; died, February 21, in a local hospital, of influenza.

Louis Henry Fales, Livermore, Calif.; Rush Medical College, Chicago, 1897; fellow of the American College of Physicians; formerly surgeon in the U. S. Public Health Service Reserve; on the staff of the Veterans Administration Facility; aged 67; died, February 13, in a hospital at San Francisco, of aplastic anemia.

John Harvey Foster, Michigan City, Ind.; Rush Medical College, Chicago, 1900; member of the Indiana State Medical Association; formerly county coroner; at one time physician in charge of the Indiana Hospital for Insane Criminals and Indiana State Prison; aged 64; died, March 8, of arteriosclerotic heart disease.

Arthur Rudolph Mandel ⊕ New York; University and Bellevue Hospital Medical College, New York, 1902; professor of clinical pathology at his alma mater; attending physician and consulting pathologist to St. Vincent's Hospital; aged 60; died suddenly, March 7, at Lake Mahopac, of coronary thrombosis.

John Walter Donaldson ⊕ Marietta, Ohio; Cleveland Homeopathic Medical College, 1901; past president and secretary of the Washington County Medical Society; served as a member of the city council and formerly president; formerly health officer; aged 63; died, February 20, of angina pectoris.

Jacob Willis Hill ✠ South Bend, Ind.; Jefferson Medical College of Philadelphia, 1881; past president of St. Joseph County Medical Society; for many years a member of the county board of health; on the staffs of the Epworth Hospital and St. Joseph's Hospital; aged 78; died, February 23.

Eugene Leo Maguire ✠ Somerville, Mass.; Harvard University Medical School, Boston, 1905; member of the New England Obstetrical and Gynecological Society; on the staff of the Somerville Hospital and secretary of its medical board; aged 58; died, February 26, of carcinoma of the lung.

Albert Lawrence Anderson, Brownwood, Texas; University of Texas School of Medicine, Galveston, 1896; member of the State Medical Association of Texas; on the staff of the Stump General Hospital and formerly on the staff of the Medical Arts Hospital; aged 70; died in February.

Ernest Charles Riebel ✠ Chicago; Northwestern University Medical School, Chicago, 1900; formerly instructor in surgery at his alma mater; on the senior surgical staff of the Englewood Hospital; aged 71; died, March 28, in the Albert Merritt Billings Hospital, of morphine poisoning.

Gregorio Singian, Manila, P. I.; University of Santo Tomas College of Medicine and Surgery, Manila, 1896; formerly professor of surgery at his alma mater; medical director of the Hospital de San Juan de Dios; president of the Philippine College of Surgeons; aged 64; died, January 29.

Richard George Wiener, New York; College of Physicians and Surgeons, Medical Department of Columbia College, New York, 1878; member of the Medical Society of the State of New York; for many years on the staff of the Harlem Hospital; aged 82; died, February 8.

William F. Hays, Claremore, Okla.; University of Louisville (Ky.) Medical Department, 1890; member of the Oklahoma State Medical Association; past president of the Rogers County Medical Society; aged 70; died, February 26, as the result of a hip injury received in a fall.

John Marshall French ✠ Milford, Mass.; University of Vermont College of Medicine, Burlington, 1877; for twenty-five years on the medical staff of the school board; for many years on the staff of the Milford Hospital; aged 87; died, February 27, of bronchopneumonia.

William Wallace Allen ✠ Mill City, Ore.; Willamette University Medical Department, Salem, 1905; past president of the Polk-Marion Counties Medical Society; bank president; for many years member of the school board; aged 60; died, February 20.

Ezekiel Ezra Smith, Newport News, Va.; Howard University College of Medicine, Washington, D. C., 1903; formerly on the staff of the Whittaker Memorial Hospital; aged 60; died, February 26, of hypertension, myocarditis and chronic nephritis.

Charles Frederick Deacon ✠ Providence, R. I.; Harvard University Medical School, Boston, 1900; for many years surgeon for the city fire department; aged 62; died, February 24, in the Jane Brown Memorial Hospital, of streptococcic septicemia.

Warren Worth Koiner ✠ Beckley, W. Va.; College of Physicians and Surgeons, Baltimore, 1906; served during the World War; on the staff of the Beckley Hospital and the Oak Hill (W. Va.) Hospital; aged 57; died, February 22, of pneumonia.

Joseph H. Hand, Blakely, Ga.; Tallahassee College of Medicine and Surgery, Medical Department of the University of Florida, Jacksonville, 1884; Georgia College of Eclectic Medicine and Surgery, Atlanta, 1887; aged 80; died, February 4.

William Henry White ✠ Goffstown, N. H.; Detroit College of Medicine, 1901; University of Bishop College Faculty of Medicine, Montreal, Que., Canada, 1903; aged 62; died, February 17, of arteriosclerosis and cerebral hemorrhage.

Carl William Forsberg, Minneapolis; University of Minnesota Medical School, Minneapolis, 1923; member of the South Dakota State Medical Association; aged 39; died, February 21, of sarcoma of the hand with metastases to the lungs.

William George Kelly ✠ Bay City, Mich.; Queen's University Faculty of Medicine, Kingston, Ont., Canada, 1897; past president of the Bay County Medical Society; formerly county coroner; aged 63; died, February 17.

Wilbur Mead Holtz ✠ Pittsburgh; Western Pennsylvania Medical College, Pittsburgh, 1903; veteran of the Spanish-American and World wars; aged 61; died, February 27, of streptococcic bacteremia and pharyngitis.

John Jefferson Davis, Madison, Wis.; Hahnemann Medical College and Hospital, Chicago, 1875; since 1911 curator herbarium, University of Wisconsin; aged 84; died, February 26, of coronary thrombosis.

Henry Ermentraut, Watertown, N. Y.; New York Homeopathic Medical College, 1882; United States Medical College, New York, 1882; aged 77; died, February 27, of chronic myocarditis and arteriosclerosis.

John Joseph Cullinan, Hampton, Va.; Lincoln Memorial University Medical Department, Knoxville, Tenn., 1910; served during the World War; aged 48; died, February 26, of pneumonia and heart disease.

John Stone Carlton, Columbus, Ohio; Starling Medical College, Columbus, 1893; member of the Ohio State Medical Association; aged 68; died suddenly, February 28, in Miami, Fla., of heart disease.

William W. Leech, Apollo, Pa.; Jefferson Medical College of Philadelphia, 1880; member of the Medical Society of the State of Pennsylvania; aged 87; died, February 26, of chronic myocarditis.

Chandler Spinx Lynch, Lumpkin, Ga.; Atlanta Medical College, 1914; member of the Medical Association of Georgia; served during the World War; aged 47; died, February 20, of coronary occlusion.

Charles Thomas Harris ✠ Kiowa, Okla.; Chattanooga (Tenn.) Medical College, 1901; aged 66; died, February 7, in a hospital at McAlester, of arteriosclerosis, acute nephritis and hemiplegia.

Guy Franklin Duncan, Sparta, N. C.; Baltimore University School of Medicine, 1902; aged 61; died, February 27, in a hospital at Elkin, of injuries received in an automobile accident.

Christopher Howson, Weaverville, Calif.; University of Toronto Faculty of Medicine, Toronto, Ont., Canada, 1905; aged 63; died, February 7, of bronchopneumonia and influenza.

Robert L. Z. Bridges, Brinson, Ga.; Louisville (Ky.) Medical College, 1894; member of the Medical Association of Georgia; aged 66; died, February 14, of mitral regurgitation.

Jacob Rettich, Cincinnati; Cincinnati College of Medicine and Surgery, 1901; physical director for ten high schools; aged 69; died, February 16, of arteriosclerotic heart disease.

Philip Robert Vivirito ✠ Brooklyn; New York Homeopathic Medical College and Flower Hospital, New York, 1929; aged 34; died, February 2, of carcinoma of the colon.

Hugh Seymour Townsend ✠ Buffalo; University of Michigan Department of Medicine and Surgery, Ann Arbor, 1889; aged 75; died, February 1, of carcinoma of the colon.

Henry Orlando Lacey, Somerville, Mass.; Tufts College Medical School, Boston, 1908; also a pharmacist; aged 56; died, February 9, in Belmont, of cirrhosis of the liver.

John Carlton Riggins ✠ Tucson, Ariz.; Jefferson Medical College of Philadelphia, 1929; on the staff of the Thomas-Davis Clinic; aged 33; died, February 4, of pneumonia.

William Henry Whittle, New Orleans; College of Physicians and Surgeons, Baltimore, 1882; aged 78; died, February 15, of fracture of the femur due to a fall.

Frank Joseph Sedlak, Scranton, Pa.; American College of Medicine and Surgery, Chicago, 1906; aged 63; died, February 14, in the Hahnemann Hospital, of pneumonia.

Edward R. Owings ✠ Baltimore; University of Maryland School of Medicine, Baltimore, 1889; aged 68; died suddenly, February 15, of coronary thrombosis.

John Henry Taylor, Cleveland; Meharry Medical College, Nashville, Tenn., 1919; aged 43; died, February 3, in the Mount Sinai Hospital, of pneumonia.

Eli Shriver Jr., Buffalo; University of Buffalo School of Medicine, 1900; aged 62; died, February 12, in the Sisters' Hospital, of mitral stenosis.

Thomas Alfred Dugdale, South Bend, Ind.; Indiana University School of Medicine, Indianapolis, 1908; aged 53; died, February 11, of pneumonia.

Milton Jay Marsh, Hannibal, N. Y.; University of Georgia Medical Department, Augusta, 1899; aged 60; died, February 21, of heart disease.

William C. Webb ✠ Higginsville, Mo.; Medical College of Ohio, Cincinnati, 1886; aged 73; died, February 1, of coronary occlusion.

Richard James Shute, Windsor, Ont., Canada; Western University Faculty of Medicine, London, 1912; aged 63; died, February 23.

Correspondence

TRICHLORETHYLENE IN MIGRAINE

To the Editor:—A publication by H. S. Rubinstein in the *Archives of Neurology and Psychiatry* for March on the use of trichlorethylene in the treatment of migraine prompts us to communicate briefly our experience with this drug as a therapeutic agent in headache. Attracted by the idea that a volatile medicament might offer a simple means for the prompt relief of headache, we tried trichlorethylene on a small group of patients in February 1936. We selected this drug because of the reports of occasional success with it in the relief of trigeminal neuralgia and angina pectoris.

Trichlorethylene was supplied by the Calco Chemical Company in glass pearls containing 1 cc. of the substance. In the treatment a pearl would be crushed in gauze, placed in the bottom of a drinking glass, and the vapor inhaled by the patient. If relief was not obtained from the first ampule within fifteen minutes, a second was administered; but not more than 2 cc. was given for any one attack. Complete history and physical examination were recorded, and objective and subjective changes were noted in each experiment.

Eighteen severe headaches occurring in fourteen patients were treated with trichlorethylene. The disappointing results obtained in this small group discouraged further investigation of this treatment. The accompanying table summarizes our experience:

Results of Treatment

Migraine attacks (9 attacks in 6 patients)	
Complete relief	2
Uncertain relief	3
Complete failure	4
Nonmigraine headaches (9 attacks in 8 patients)	
Complete relief	2
Uncertain relief	1
Complete failure	6

The six migraine patients were classic cases, and all nine attacks were severe. Only two attacks yielded satisfactorily; i. e., practically complete subsidence of discomfort within thirty minutes. In one patient, three successive attacks were entirely uninfluenced by trichlorethylene. In another subject one attack terminated dramatically, but a subsequent seizure failed to yield to the inhalation.

The nonmigrainous cephalalgias included such cases as menstrual, posttraumatic, fatigue, and sinus or "cold" headaches. Of nine attacks in eight patients, relief was obtained again in only two. Therefore, among the eighteen headaches treated, only four were satisfactorily relieved, and complete failure resulted in more than half of the instances. It is of passing interest to note that the proportion of favorable results is similar to that reported by Glaser (*West. J. Surg.* **39**:901 [Dec.] 1931) for tic douloureux. We observed no harmful effects from the inhalations, but symptoms and signs of first degree inhalation anesthesia were usually evident.

Apparently our experience differs considerably from that of Rubinstein, who reported consistently beneficial results in all of his six migraine patients. Further experience will probably allow a better judgment of the value of trichlorethylene in migraine. It is certainly not a specific remedy for migraine, and it is far from being a headache panacea.

Two recent reports adequately review the pharmacology and toxicology of trichlorethylene (Eichert, Herbert: Trichlorethylene Intoxication, THE JOURNAL, March 9, 1936, p. 1652. Love, W. S.: *Ann. Int. Med.* **10**:1186 [Feb.] 1937). The present evidence appears to indicate that relief of pain in angina pectoris, tic douloureux and migraine is probably dependent on the central sedative and anesthetic properties of this compound. It is true that clinical and experimental poisoning by this agent is less severe than, and differs greatly from, industrial poisoning, and trichlorethylene is apparently less toxic than chloroform. However, it must be remembered that this chemical belongs to, and shares the pharmacologic properties of, the halogenated aliphatic anesthetics. Indeed, it has even been used clinically for complete surgical anesthesia. Despite the fact that no serious untoward effects have been reported from the cautious and proper use of trichlorethylene in the relief of pain, nevertheless in our opinion this drug is not one to be employed indiscriminately or without the knowledge and supervision of the patient's physician.

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THE MECHANISM OF EXOPHTHALMOS IN EARLY ACTIVE EXOPHTHALMIC GOITER

To the Editor:—In order to advance my theory of exophthalmos in exophthalmic goiter, based on 300 operative cases from September 1924 to March 1937 (a twelve and one-half years period) it is necessary to agree on certain fundamentals:

1. That the exophthalmos is due to exophthalmic goiter.
2. That exophthalmos is usually bilateral and in some relation to the severity of toxicity.
3. That exophthalmos usually subsides when toxicity is removed.
4. That exophthalmos is less frequent (60 per cent in my cases) since the advent of compound solution of iodine and since patients come early for surgery.

As the condition has not been understood, and as the literature is flooded with varied theories, my explanation to be tenable should have the following requisites:

1. It must explain the varied anatomic physiologic and pathologic changes, beginning with the first eye sign, the stare, and covering the varied degrees of exophthalmos. (The malignant type with the changes of toxicity preoperatively and postoperatively will be taken up in my complete report.)
2. It cannot contradict any of our proved facts.
3. It must not violate Pascal's law.

With the increased activity of the thyroid in the early phase of exophthalmic goiter there is a stimulation of the nervous system, particularly the sympathetic (tremor, sweating, redness of skin). The first manifestation of sympathetic stimulation in the eye is the stare due to retraction of the upper lid (Stelwag's sign) from an involuntary continued contracture of the levator palpebrae superioris. This muscle, arising above and in front of the optic foramen, runs forward and ends anteriorly in a wide aponeurosis, which splits in three lamellae. The superficial lamella blends with the palpebral fascia (orbital septum; torso-orbital fascia); the middle lamella (largely nonstriped muscle) is inserted into the upper margin of the tarsus; the deepest lamella is attached to the superior fornix of the conjunctiva.

Moderate continued contracture of this muscle at first just takes up the slack in the orbital septum and exaggerates the elevation of the upper lid, producing the characteristic stare. Soon it retracts the palpebral fascia (orbital septum), stretching it backward (intra-orbitally), thereby slightly raising the intra-orbital pressure. This gradually adjusts itself by a slight forward movement of the eye, and, as the muscle spasm continues, the fascia retracts further, the pressure adapting itself by more

protrusion of the eye, finally resulting in a noticeable exophthalmos. While this phenomenon is going on, the crowding of the lid against the stretched orbital septum somewhat impedes drainage of the orbital tissue spaces, and a mild edema begins, which further accentuates the protrusion.

ROBERT E. MORAN, M.D., Washington, D. C.

Queries and Minor Notes

THE ANSWERS HERE PUBLISHED HAVE BEEN PREPARED BY COMPETENT AUTHORITIES. THEY DO NOT, HOWEVER, REPRESENT THE OPINIONS OF ANY OFFICIAL BODIES UNLESS SPECIFICALLY STATED IN THE REPLY. ANONYMOUS COMMUNICATIONS AND QUERIES ON POSTAL CARDS WILL NOT BE NOTICED. EVERY LETTER MUST CONTAIN THE WRITER'S NAME AND ADDRESS, BUT THESE WILL BE OMITTED ON REQUEST.

URTICARIA WITH ANGIONEUROTIC EDEMA

To the Editor:—The following is the history of a patient whose condition has me "stumped." I would appreciate any suggestions you might make as to diagnosis and treatment: A white man, aged 34, weighing 143 pounds (65 Kg.), has repeated attacks of localized swelling of the skin. The swollen areas vary from the size of a pea to irregular areas the size of the palm. Most of the swollen areas, however, are about the size of a walnut to the size of an egg. Although these swollen areas may appear on any part of the skin, they are most prevalent on the back and especially along the spine (about 1 or 2 inches from the spinuous processes). The areas are pale red, feel somewhat indurated, do not itch (occasionally a very slight itching may be present), and are not tender or painful except when they involve a joint. The joints most likely to be affected are the knees, ankles and joints of the feet. During the attacks, when these wheals appear, any slight scratch, pressure or trauma to the skin will produce a welt. The shoulder strap of a fishing tackle box or an ordinary belt about the hips will produce a welt on the skin for the full extent of the strap. Welts appear on the forearm when pressure is made by boxes or furniture that he may be carrying. The individual welts last one or two days and then disappear, although the period during which they may arise may be of two or three weeks' duration. He is now in the fifth attack of this condition; the first was in the spring of 1935, when it seemed that only joints were involved (feet, ankles and knees), the second in the spring of 1936, the third in November 1936, the fourth in January 1937, and the fifth in February 1937. The fourth attack followed his investigation of a leaking roof in the attic. He pulled himself up through a small trap door entrance to his attic and walked about on the cross beams in his thin-soled house slippers. The following day he noticed large areas of swelling of the posteromedial aspects of both arms where they had borne his weight in pulling himself up through the trap door, and he noticed that there was increasing pain and swelling in the region of the inner arches of the feet. Numerous other areas of localized swelling were present on the extremities and trunk. He was given 0.7 cc. of epinephrine solution (1: 1,000) with no effect after a period of four hours. All symptoms disappeared in three days.

The patient came to my office two days after the onset of the fifth attack (about one month after the fourth attack). The lesions in this attack differed from those of former attacks. They were predominantly on the back but were more scattered over the region of the scapulae and small of the back rather than along the spine, where they had formerly predominated. There were a few scattered over the legs, arms and wrists. The lesions themselves differed from the former ones in that they were smaller, varying from a pinhead to a 50 cent piece (30 mm.). Instead of being rounded they were flat on top (the edges as high as the center); the peripheral boundaries were more irregular or serrated; the lesions were bright red, whereas former lesions were slightly pinker than the surrounding skin; the centers of the larger lesions were clear or pale, giving a ring or horseshoe appearance; the larger lesions were elevated about 3 or 4 mm. above the surrounding skin; there was more itching, not intense but slightly annoying. By the end of the third day the lesions had practically disappeared, but the right foot began to swell and in an hour's time was so swollen that he could not put on his shoe. This swelling lasted for two days. The swelling involved only the foot, there being no involvement of the ankle. There was no swelling in the left foot. At the same time there was slight swelling in the right knee, and pain appeared in the knee as the swelling subsided. No heat or redness in the swollen areas occurred.

The patient gives no history of allergy to any food except strawberries. He was not sensitive to strawberries before 1935 and since that time has eaten them only twice with an urticarial reaction each time. He has taken calcium gluconate and cod liver oil concentrate daily since the attack in November 1936. He had previously been on alkalis and a diet of fruits and vegetables (no meat or acid-producing foods) for a period of three months with no effect on the condition. He seems perfectly well during these attacks except possibly for a little loss of "pep." His wife believes that she can predict the approach of an attack because "he looks a little pale." He is of the slender, energetic type. Until the past year or so he was quite active in athletics, such as basket ball, baseball and volley ball. The physical examination is entirely negative except for a slight dermagraphic reaction. The temperature and pulse are normal throughout the attacks. Urinalysis is negative. He is the manager of a furniture store. He has always been in good health. He had measles, pertussis and chickenpox during childhood. He had inflammatory rheumatism and typhoid at 7 years of age. He had an attack of rheumatism in the knees lasting but a few days in the fall when 8 and again at 9 years of age. He did not have chorea or tonsillitis. There have been no operations, symptoms referable to gastro-intestinal, genito-urinary or cardiovascular disease or to disturbances of the respiratory system. No weight loss has occurred but he cannot gain weight. The bowels move regularly without laxatives. There is no history of hay fever or asthma. He does not use alcohol. He smokes one package of cigarets a day. He sleeps well. His father, one brother and one sister died of tuberculosis. One sister was in a sanatorium eight years with tuberculosis and was dismissed two years ago as cured. The mother died of carcinoma. There is no history of any allergic condition in the family. I was of the opinion that the condition was a type of angioneurotic edema until I found that here was no change in the lesions after injection of epinephrine solution. The patient is an intelligent, well educated man, constantly watching his diet and environment for something that may be producing the condition. He is distinctly not of the neurotic type unless I am badly fooled.

M.D., Indiana.

ANSWER.—The description of this condition speaks strongly for urticaria combined with angioneurotic edema. The fact that the patient may not obtain relief from injections of adequate amounts of epinephrine solution is not a valid enough objection to this diagnosis. Epinephrine is frequently without effect in urticaria. Even in asthma it may fail to produce relief. The fact that the patient is definitely sensitive to one known food, even though it is such a commonly accused food as strawberries, suggests that the source of these attacks may also be due to definite protein sensitivity.

The determination of the cause of urticaria is at times one of the most difficult problems for even a seasoned allergist. The following outline of causes is therefore offered as a guide for further work:

1. Ingestant factors: (*a*) Any food may be a cause. Often a patient blames meat when the onions or pepper used for flavoring is the cause. (*b*) Drugs are often overlooked. The commonest are acetylsalicylic acid and its derivatives, phenolphthalein, quinine and the iodides (iodized salt).

2. Contact substances: These are too numerous to mention. An intelligent study of the occupation and hobbies of the patient is necessary in each case suspected of belonging in this group.

3. Infections: (*a*) Focal infections in the sinuses, gallbladder or appendix, not frequent causes. (*b*) Infections caused by epidermiphytosis, one of the commonly undiagnosed causes. A close inspection of the toes with the finding of definitely active lesions of a ringworm infection may lead to the presumptive cause. The added proof required is for the urticaria to disappear with the successful clearing of the ringworm infection.

4. Parasites: (*a*) Scabies may occasionally cause urticaria. (*b*) The stools should be examined, especially in the presence of diarrhea or other gastro-intestinal complaints. Freshly passed stools or mucus from the intestine may be necessary in some of the suspected but rare causes of urticaria (amebiasis). An unusually high blood eosiniphilia may suggest stool examinations.

5. Endocrine dysfunction: This may be a cause of urticaria. It is not as common a cause in males as in females. Thyroid dysfunction, usually hypothyroidism, but possibly also hyperthyroidism, may be a cause of the condition.

6. Physical causes: Light (urticaria solare). Heat. Cold. Trauma: This (urticaria factitia) was probably an aggravating factor during the fourth attack. The physical causes are considered by some authorities as frequent primary causes of urticaria. Others consider them usually as secondary, or factors that aggravate an attack in the presence of other primary causes.

7. Psychogenic causes: Possibly the most likely group into which such a patient falls is the "ingestant" group. Drugs should be carefully ruled out as a cause. Foods may then be studied by intradermal tests. (Scratch tests rarely work. Intradermal tests react in from 25 to 50 per cent of the cases.) Positively reacting foods should be completely eliminated from the diet. It may be necessary to go further into the allergic study by using the method of diet diaries. (Study by the elimination diet does not fit this case because of the infrequency of the attacks.) A study should be made of foods eaten for twenty-four hours before the onset of an attack and especially during the meal preceding the attack to see whether any food is sufficiently unusual to be suspected. Should these measures fail, the worker may resort to leukopenic index studies of suspected foods when skin tests are of no aid. The technic has been described in several recent articles by Warren T. Vaughan on this subject (*J. Allergy* **5**:601 [Sept.], **6**:78 [Nov.] 1934, 421 [July] 1935; *J. Lab. & Clin. Med.* **21**:1278 [Sept.] 1936).

TREATMENT OF SYPHILIS

To the Editor:—A white woman, aged 25, consulted another physician in April 1931 for a blood Wassermann test following a suspicious contact and before any symptoms had appeared. The reaction was positive and neoarsphenamine therapy was instituted. One year later, after thirteen intravenous injections, with appropriate rest periods, the blood Wassermann reaction was negative. Because of some sort of idiosyncrasy to neoarsphenamine, that drug was discontinued, and a bismuth compound was started. Between 1932 and the present time the patient has received 130 bismuth injections (deep, intragluteal) and seven of colloidal mercury sulfide by the same route. The patient has had no complaints at any time, and the blood Wassermann reaction has been persistently negative. It is felt that the initial test on the blood was correct because it was repeated twice thereafter before treatment was begun. Will you please comment on (1) whether this patient has received enough antisyphilitic treatment to be considered cured, (2) whether the disease process may be considered permanently arrested, and (3) whether mercuric therapy should be continued and a lumbar puncture for examination of the cerebrospinal fluid done in spite of the absence of symptoms. Please omit name.

M.D., Florida.

ANSWER.—1. The patient has not received what is now considered the minimum amount of treatment necessary to cure a patient with early syphilis. However, patients do not all respond alike to the prescribed number of injections, because in a few cases cure is obtained with less than the recommended amount, while in others two or three times this amount of treatment fails to produce cure. From the information given in the inquiry it appears that the Wassermann reaction has been negative for approximately five years, and if the spinal fluid is also negative the patient may be placed in the "cured" group.

2. Accordingly, the disease process may be considered arrested provided the spinal fluid is negative. Nevertheless, as this young woman is still in the child bearing age, it would be advisable to warn her of the necessity of undergoing further treatment should she become pregnant. The Cooperative Clinic Group studies have shown that in 17 per cent of the women with latent syphilis and negative blood serologic reaction syphilis has interrupted the pregnancy or resulted in the child's having the disease. Hence adequate treatment is indicated throughout the pregnancy even though the patient had sufficient treatment before the conception to render the reaction negative.

3. It is urged that the patient's spinal fluid be examined now although the reaction on the blood is negative and she is asymptomatic. If the spinal fluid test is negative, no further treatment is necessary, whereas if the report is positive, specialized treatment will be warranted.

RENAL GLYCOSURIA

To the Editor:—A man, aged 26, in good health, consulted me because of a positive urinary sugar. This condition was first noticed at least six years ago, at which time he was turned down for insurance. There are no symptoms whatever of diabetes mellitus. The urine shows dextrose in about 50 per cent of the specimens, while the other 50 per cent are negative. The highest recorded amount of dextrose has been 0.4 per cent. In November 1934 the blod sugar, on a fasting stomach, was 86.2 mg. per hundred cubic centimeters of blood. More recently the fasting blood sugar was 100 mg. and the urinary sugar was negative. Two and one-half hours after 100 Gm. of dextrose by mouth, the blood sugar was 64.5 mg. and the urinary sugar 3 plus. I would appreciate your opinion as to the significance of these observations and whether or not this patient should be classed as a true diabetic or one with a renal glycosuria. Please omit name.

M.D., Tennessee.

ANSWER.—The range of the normal fasting blood sugar is from 80 to 120 mg., with an average of 100 mg. per hundred cubic centimeters of blood. More recent modifications by Folin and by Benedict give results from 20 to 30 mg. lower.

Any glycosuria in a patient with a fasting blood sugar below 110 mg. is probably unimportant and not diabetic. Values up to 140 mg. may be obtained in acute infectious diseases, especially pneumonia, focal infections, hypertension and arthritis. Variations with values slightly above normal may occur in disorders of the ductless glands (thyroid, pituitary) other than the islets of the pancreas.

Mild diabetes is usually associated with fasting blood sugar from 150 to 250 mg., while the more severe types show between 250 and 600 mg. or higher. An elevation of long duration is characteristic of diabetes; a quick rise and decline are characteristic of hyperthyroidism, acromegaly and hyperadrenalism.

Sugar is usually eliminated by the kidneys when the blood sugar reaches from 160 to 180 mg., except in some cases of renal disease. In normal persons the blood sugar seldom rises above 140 mg. after an average meal. After excessive sugar intake an alimentary glycosuria may occur in a normal person.

Renal glycosuria is characterized by a normal blood sugar and usually less than 1 per cent of sugar in the urine. The sugar in the urine does not vary much with the amount of carbohydrate ingested. Most cases of renal glycosuria remain benign; there is often a hereditary tendency. After a number of years, diabetes develops in a few cases.

A fasting blood sugar above 120 mg. per hundred cubic centimeters with glycosuria indicates diabetes. The maximum normal blood sugar in a sugar tolerance test (ingestion by an adult of 100 Gm. of dextrose) should not exceed 180 mg. at one hour and should drop to 140 mg. at two hours. In diabetes mellitus the curve shows over 150 mg. in two or three hours. A fasting blood sugar below 120 mg. with a rise to 200 or over after one hour, and return to 120 or lower in two or three hours, suggests hyperthyroidism or hyperpituitarism.

When a low renal threshold can be demonstrated as in the case cited, with a fasting blood sugar of 86.2 mg. and return to 64.5 mg. in two and one-half hours, the glycosuria must be considered benign. When there is a rise to an abnormal height after the ingestion of 100 Gm. of sugar, one must be more cautious. A diabetic curve is abnormally high throughout. The patient does not have true diabetes; he has a so-called renal glycosuria. A sugar tolerance test with one sample of blood before and other samples one, two and three hours after ingestion of 100 Gm. of dextrose should be done.

USE OF TRUSS IN HERNIA

To the Editor:—There has been some dispute as to the value of a truss in a femoral hernia. Should a man with a femoral hernia be advised at all to wear a truss? If a truss is worn is there any possibility of cure, such as might occur in an indirect inguinal hernia? Please omit name.

M.D., New York.

ANSWER.—One having a femoral hernia should be advised not to wear a truss but to be operated on unless there is some strong contraindication, such as a poor operative risk.

In any irreducible hernia a truss should not be advised. Conditions are somewhat different in a reducible femoral hernia from those in an indirect inguinal hernia, in which a properly fitted truss pad may be placed over the internal ring. Adhesions may form with clinical cure in a child or adolescent, but a certain number may recur at a later period if the truss is taken off.

When the truss pad is placed over the external ring in an inguinal hernia, the viscera may be prevented from coming out but no cure will result. Similarly, the use of a truss in a femoral hernia may prevent the hernia from coming out but owing to the strong Poupart ligament it is impossible to compress the femoral canal and obliterate it. If it should be attempted, the underlying blood vessels might be damaged and a thrombophlebitis or thrombus formed.

It is possible by means of a small downward steel extension to a spring truss frame to hold a pad over the femoral canal and to maintain some pressure. It is difficult to keep a constant pressure unless one is particularly fortunate in the mechanical fitting of the truss, which is difficult. The usual result is that the pad does not keep the hernia from coming out under ordinary exercise or working conditions.

When a hernia is not completely reduced, adhesions of the omentum or bowel are likely to form in the sac with incarceration, which prevents complete reduction.

A femoral hernia is rarely continuously held up with a truss; consequently there is frequent danger of strangulation.

COMBATING SNAKE BITE

To the Editor:—Please inform me of the most practical means for combating snake bite in Central American countries, specifically the republic of Honduras. What commercial kit, for travel, can be recommended and are there any antivenom serums that do not deteriorate if not refrigerated or kept reasonably cold? Please omit name.

M.D., Virginia.

ANSWER.—There is one efficient and now well tested method of treating the bite of our pit vipers—moccasins, copperheads and rattlesnakes—and that is (1) the immediate shutting off of the lymphatic circulation by a ligature, not too tight, around the extremity, leg, finger or arm, immediately above the swelling from the hemolyzed extravasated blood; (2) cruciform incisions through the skin at the fang punctures, with further similar incisions about three-fourths inch apart wherever there is any swelling, and (3) suction applied to such incised areas for about half an hour to extract the laked blood with the venom. If the swelling extends, the ligature should be placed higher up and the incisions and suction continued, the latter for at least twenty minutes out of every hour so long as swelling persists. This vital performance is sometimes facilitated by injecting a mild saline solution into the tissues to promote the outflow. Where much of the poison has been absorbed

and the patient is profoundly affected, antivenin may be useful, but it must be given in far greater doses than heretofore advocated; that is to say, five, ten and fifteen ampules. A single ampule is of no use. Credit for this new and wonderfully efficient method of treatment is due Dr. Dudley Jackson of San Antonio, Texas. The simple extraction outfit can be secured from the Flack Drug Company of San Antonio or from sundry other firms.

If the patient is bitten by a coral snake, such a method would not be effective unless applied at once after shutting off the circulation temporarily; this is conjectural. There is no other remedy.

RECURRENT PYREXIA AFTER LAPAROTOMY

To the Editor:—A woman, aged 36, married, with one child who is 7 years of age, had a left-sided nephrotomy sixteen years ago with no serious illness up to the present time. In the middle of February 1936 she noticed that she had a fever. I saw her in my office March 5, complaining of (1) headache, either two days before or after menses or half-way between, (2) backache, (3) pain in the lower part of the abdomen, (4) pain in the right groin, (5) pain in the chest, usually before the menses, and (6) fever for the past two weeks. Physical examination revealed blood pressure 114 systolic, 70 diastolic; pulse 74; temperature 99.1; heart normal; chest clear; throat normal. There were two decayed teeth (left lower molars). Pelvic examination revealed marked inflammation of both tubes, retroversion of the uterus and tenderness over McBurney's point. A diagnosis of pelvic inflammatory disease and subacute appendicitis was made. March 25 a laparotomy was done, consisting of bilateral salpingectomy, appendectomy and a ventral suspension. Recovery was uneventful, and the patient left the hospital with practically a normal temperature. She still continues at this date to have a fluctuating temperature. Her blood count is normal; repeated urinalyses give normal results; tests for tubercle bacilli in the urine are negative; roentgenograms and physical examinations of the chest are negative for tuberculosis, and roentgenograms of the kidneys are normal. The patient is 5 feet 5 inches (165 cm.) tall and weighs 86 pounds (39 Kg.) with her house clothing on. She feels well in every respect. She is now rid of all her complaints, except for the fever. Kindly omit name.

M.D., Pennsylvania.

ANSWER.—If one assumes that all grossly diseased pelvic organs were removed at the time of the laparotomy and that pelvic examination is negative at present, it seems entirely improbable that pelvic infection is responsible for the present low grade fever. Cervicitis alone almost never produces fever; chronic endometritis and metritis are rarities; oophoritis ordinarily manifests itself by pain, tenderness and menstrual dysfunction, none of which the patient has. Long continued postoperative fever should always bring to mind the possibility of an overlooked sponge. Since the correspondent has investigated the common sources of fever, the problem now resolves itself into a study of obscure chronic pyrexia. This subject has been discussed and references were cited by THE JOURNAL, Sept. 7, 1935, page 803, and Sept. 28, 1935, page 1059. Among the possibilities to be considered further are undulant fever, rheumatic infection, endocarditis, focal infections (nasal sinuses, mastoid, middle ear, teeth, gallbladder), syphilis, Hodgkin's disease, tuberculosis, hyperthyroidism and psychogenic fever. It is essential that a reliable chart be kept showing the temperature three or more times a day over a period of several weeks. If no diagnosis can be reached, a regimen designed to increase the patient's weight will probably benefit her and may incidentally lead to a normal temperature.

"MISTER" OR "DOCTOR" AS ADDRESS FOR BRITISH SURGEONS

To the Editor:—Would you kindly, without publishing my name, publish in Queries and Minor Notes the reasons surgeons are addressed as "Mister" in England and physicians as "Doctor." Possibly the distinction is not as clean cut as I surmise, but I should like to know the origin of the difference.

M.D., Duluth, Minn.

ANSWER.—The terms Doctor and Master were interchangeable and of equal value in the earliest medieval universities. In process of time the faculties gave the degree of Doctor and Bachelor. These continued but the Master in Surgery dropped out, partly because there were no candidates and partly because surgery came to be looked on as an inferior branch divorced from physic. Graduates who practiced as what would now be called surgical consultants were content to use the term magister. Peter Lowe of Glasgow was always known as Maister Peter Lowe at the end of the fifteenth century. John Arderne, the father of English surgery, had gone one better 200 years earlier, for he began as John Arderne, became Maister John Arderne and ended, when he settled in London, as Maister John de Arderne. In the seventeenth century a doctor of medicine was a university graduate like Dr. Radcliffe or Dr. Mead. We know from the novelists of the eighteenth century that the term was still in restricted use, for when a medical man is called in he is surgeon So and So, Mr. Blank or the Apothecary, and all were treated with scant respect. Territorial restrictions were abolished in the nineteenth century and many Scottish graduates settled in England. They usually held the M.D. degree and after their arrival the use of the word Doctor became generic and appeared to be so desirable that some of the English licensing bodies allowed their members to use it as a courtesy title. The term Master was retained by consulting surgeons as a continuation and contraction of Magister; when it is used by a general practitioner it is a term of respect, a mere variation of the older form of Measter, just as the last generation spoke of Mrs. as Mistress So and So, but except for surgeons, Mr. is rapidly being replaced by Dr.

TREATMENT OF NEUROSYPHILIS

To the Editor:—Paralysis of the oculomotor nerve has occurred, as evidenced by ptosis of the lid (left eye), inability to move the eyeball medially, and dilatation of the pupil. This results in double vision unless one eye is closed. It came on suddenly, Oct. 18, 1936. Syphilitic infection occurred over twenty years ago; the patient is now 60 years of age. Some intravenous treatment was given ten years ago. Vision in both eyes was not good for many years prior to the present condition. There has also been some tremor of the hands but no disturbance of gait or mental condition. To date this patient has been getting ordinary treatment with neoarsphenamine, a bismuth compound and potassium iodide since the onset of the acute eye muscle paralysis. I wish to know whether it is advisable to give tryparsamide. If it is or is not given, what is the outlook for any improvement in the paralysis of the eye muscles?

G. L. RATHBUN, M.D., New Windsor, Ill.

ANSWER.—When an oculomotor palsy does not clear up in from six to eight weeks, it is rather unlikely that it will do so later, irrespective of the type of treatment used. Tryparsamide is unquestionably more efficacious in treating syphilis of the central nervous system than either neoarsphenamine, bismuth compounds or potassium iodide and would be definitely indicated in this case except for the possibility of damage to the optic nerve. There is a difference of opinion as to the advisability of using tryparsamide in optic atrophy. It is wiser, however, in most instances not to attempt to use this drug if atrophy has occurred.

In the case under discussion there is no evidence of optic atrophy, but rather evidence of some disturbance in the media. As arsphenamine is more likely to cause disturbances of the media than does tryparsamide, it would seem reasonable to switch to the latter drug. This should be given, however, in small doses, e. g., 1 Gm., for some time, and during this period the eyes should be watched very carefully from the standpoint both of subjective and of objective changes.

EFFECTS OF CLIMATE, PARTICULARLY SEASHORE, ON HYPERTENSION

To the Editor:—I have noticed that several of my patients who have spent a long time at the seashore returned with a higher blood pressure than when they left the city. Recently a patient of mine, aged 60, suffering from diabetes mellitus, whose blood sugar has been reduced from 450 mg. to 220 mg. and who felt very well under insulin treatment and whose blood pressure was 165/110 for about two years, returned from a three months vacation with a blood pressure of 230/120. The insulin treatment was continued during her vacation. Has it also been your experience to find that the salty air and absolute lack of exercise has the same effect on a patient?

SIMON STEINBACH, M.D., New York.

ANSWER.—So far as is known, the "salty air" of a seashore resort has no appreciable effect on the arterial tension one way or the other. Absolute lack of exercise, on the other hand, may be a significant factor. H. O. Gunewardene (High Blood Pressure and Its Sequelae, Baltimore, William Wood & Co., 1935) has emphasized that physical inactivity plays an important part in hypertensive arterial disease in India. Hypertension rarely occurs among rickshaw runners, who take violent exercise with long and exhausting hours, whereas it is notably common among certain social groups who habitually lead sedentary lives with overeating. It is also conceivable that this and similarly affected patients tend to overeat while residing at the seashore. Anxiety, worry and mental fatigue also may be factors; it is not justifiable to assume that, because the stay is called a vacation, mental relaxation necessarily follows. Careful questioning of these patients as to sources of annoyance, irritation or fear is advisable before one can attribute the change to climatic conditions. For example, it has been observed that similar episodes finally proved to be due to the fact that the patient had been playing cards for stakes beyond her means

at a mountain, not seashore, resort. Changes in environmental temperature may be associated with changes in the arterial tension without a doubt; cold causes the pressure to rise and hot weather is associated with a drop. In isolated instances such exacerbations as were noted with the patients returning home from the sea may be due to transient infections while away. The arterial tension, notoriously labile even in normal persons, is always more readily raised than lowered in those with hypertensive arterial disease. In an individual constitutionally vulnerable, any number of factors may precipitate exacerbations or recurrences of the hypertension. It is primarily for this reason that hypertensive arterial disease must be considered as possibly controllable but not curable.

LOW RESIDUE AND HIGH RESIDUE DIETS IN HEMORRHOIDS

To the Editor:—In the past it has been taught that high residue, bulky diets are indicated in the treatment of constipation. However, one of my patients had a hemorrhoidectomy a few months ago and she tells me that she was advised to continue a smooth diet indefinitely. She states also that her physician told her that a low residue, high protein menu will act as a stimulant to peristalsis. Which of these views is the correct one?

J. B. STOKES, M.D., Ottawa, Ill.

ANSWER.—The balanced American diet calls for a proper adjudication of residue and nonresidue foods. It has been amply proved and substantiated that the continued use of a bland diet over a long period commonly results in an intolerance of the intestinal tract for the residue bearing foods later infiltrated into the diet.

The use of high residue, bulky diets for the treatment of constipation is still indicated when a state of atonicity is the etiologic factor. However, in cases of constipation of spastic origin such a diet is not only contraindicated but is capable of increasing the presenting condition.

In the light of present knowledge it is not reasonable to suppose that a low residue, high protein menu will act as a stimulant to peristalsis. It must be borne in mind, however, that a high protein menu would of necessity involve the ingestion of approximately 100 Gm. or more of protein, derivable mainly from meat, fish, cheese and eggs. It is barely possible that the fiber contained in large quantities of meat would provide sufficient residue to act as an intestinal stimulant.

INDIGESTION AND TUBE FEEDING

To the Editor:—In handling psychotic patients who refuse food I am in the habit of giving them a feeding by stomach tube either once or twice daily. I find that often, as a result of this tube feeding, patients develop diarrhea and I am anxious to learn whether there is something wrong with the formula that I use or whether there is any particular ingredient that is not used properly or used to excess. The tube feeding formula consists of four eggs, 4 ounces of butter, 2 ounces of sugar and 20 ounces of milk. In addition to this feeding, which is approximately 1 quart, 1 ounce of cod liver oil and 1 ounce of tomato juice and several grains of concentrated yeast are poured down the tube. I estimate that the total value of such a feeding is about 2,000 calories. In cases in which I feel that 1 quart is too much to give at one feeding I divide the amount into two feedings. I would appreciate an opinion from you as to whether there is something in this formula that causes the diarrhea. Any suggestions along this line will be appreciated. M.D., New York.

ANSWER.—A rough evaluation of the feeding stated reveals the administration of approximately 175 Gm. of fat, yielding about 1,600 calories, to the feeding.

It would appear evident that this amount of fat in a total caloric yield of about 2,300 calories is entirely too high.

It appears most likely that the proportionate mass of fat administered is probably responsible for the intestinal irritative symptoms.

OPACITY OF CORNEA

To the Editor:—I have as a patient an infant, 4 months of age, with a congenital malformation of the left eye which, as far as I can tell, is a complete corneal opacity. The child has been seen by a competent ophthalmologist, who told the mother that there was no hope of vision but that a glass eye could be inserted later because of the disfigurement. If the eye is useless, could not the disfigurement be corrected by other means, as by tattooing a pupil? Has a glass pupil, similar to a contact lens, ever been used? Please give references in answer. M.D., New Jersey.

ANSWER.—Congenital opacity of the cornea may vary from merely a thin leukoma to the complete opacity here described. The condition has been studied extensively by von Hippel, Peters, Clausen, Fuchs, and others (see Kurzes Handbuch der Ophthalmologie, vol. 4) and there is no unanimity of opinion as to the cause. In later life, colored tattooing by the Holth method might be successful, but the suggestion of using a thin artificial glass shell eye over the eyeball is the most practical. A "glass pupil similar to a contact lens" is out of the question.

HEREDITARY KERATOSIS PALMARIS ET PLANTARIS

To the Editor:—What, if anything, can I do for a case of congenital and hereditary keratosis palmaris et plantaris? My patient, a girl aged 6, is of the third generation to suffer from this malady, her father and his mother being likewise troubled. Two other children, a brother and sister, do not have the disease. Salicylic acid ointments and other remedies have helped little, if any. I have not employed constitutional treatment of any kind. Are the x-rays of any benefit? If so, what dosage should be employed? N. H. FARRELL, M.D., American Falls, Idaho.

ANSWER.—Complete relief in congenital and hereditary keratosis palmaris et plantaris is rarely accomplished. The patient can be made comfortable and the skin kept soft by treatment. The use of from 3 to 10 per cent salicylic acid in petrolatum, together with prolonged maceration of the parts in water and rubbing with bland soaps, is of value.

In such cases in adults associated with low basal metabolic rates the use of thyroid by mouth is sometimes of value in addition to other treatment. X-rays have been used with beneficial results in these cases. Response to the latter is variable, however, and in view of the recurrence of the condition they must be used with great caution to prevent the likelihood of a radio dermatitis supervening. Single suberythema doses, cautiously given with a well calibrated machine may be used.

In a child, however, it would probably be wiser to give a fractional x-ray exposure of from 50 to 75 roentgens at five to seven day intervals for four to six exposures. A long rest period should be allowed before repeating the dose.

SAFETY OF THE SHOE-STORE FLUOROSCOPE

To the Editor:—Your answer on "Safety and Utility of Fluoroscopy" (THE JOURNAL, March 27, p. 1134) brings forth the question of the safety of the shoe store fluoroscope, such as that used by the local shoe firm to which I send my patients. While the shoe people find these instruments extremely useful in checking fittings, especially for children, I have wondered with regard to the safety with which they may be employed. Is there any way to determine the escape of dangerous irradiation?

M.D., Michigan.

ANSWER.—Shoe store fluoroscopes have less value in connection with the fitting of shoes than may appear on the surface. Their value is chiefly commercial, because they make a considerable impression not only on the customer but also on the dealer. As for their safety, exact data are not available. It is probable that the time required for the average fitting is short enough to make any real danger slight. Nevertheless, the possibility of danger is there. To determine the margin of danger present would require accurate physical measurements which to our knowledge have not been made.

DERMATITIS HERPETIFORMIS

To the Editor:—A man, aged 50, has a chronic dermatitis, which began three years ago. A diagnosis of dermatitis herpetiformis was made by me and confirmed by a well known dermatologist. The patient has no other complaint, there are no obvious foci of infection, and his general physical examination is negative except for the skin lesions. Treatment has consisted of various lotions of the calamine mixtures with solution of coal tar and other local treatment of similar nature, sodium cacodylate both intramuscularly and intravenously, neoarsphenamine intravenously, a series of autogenous colon vaccine, and many lotions and ointments prescribed elsewhere. Realizing how persistent and practically incurable this condition is, I nevertheless would appreciate any further information as to subsequent treatment that might benefit this man. Please omit name.

M.D., Kansas.

ANSWER.—The response to therapy in dermatitis herpetiformis is variable. All foci of infection should be ruled out, including the prostate. The use of dicalcium phosphate by mouth with vitamins A and D is of value. Calcium may also be given by intramuscular injections as calcium gluconate. The intramuscular injections of 10 cc. of the patient's own blood (autohemotherapy) at intervals of from three to five days is of value in many of these cases. Arsenic may be employed again in the form of solution of potassium arsenite, beginning with small doses and gradually increasing to the physiologic limit. The urine should be carefully watched during the arsenic administration. Salicin in 1 Gm. doses, thyroid and antipyrine have been employed. X-ray exposure of the spinal region was used with success by H. R. Foerster (*Arch. Dermat. & Syph.* **25**:256 [Feb.] 1932).

Locally, the use of lotions containing phenol or menthol, or ointments containing sulfur is recommended. Soothing effects

are further obtained by alkaline, bran or oatmeal baths, or the use of a bath to which from 4 to 6 ounces of solution of sulfurated lime (Vleminckx's solution) has been added.

A simple diet with moderate exercise and regular habits of living, together with nervous and emotional calm, is essential to successful therapy.

SENSITIVITY TO ARSPHENAMINE

To the Editor:—I have a patient with syphilis who is sensitive to arsenic. I have tried neoarsphenamine, mapharsen and bismarsen and all produce a severe dermatitis. Sixteen bismuth intramuscular treatments have not changed the 4 plus Kahn reaction. Can you suggest any other arsenical that will not produce a dermatitis? If not, what would you advise as to treatment? Please omit name. M.D., Illinois.

ANSWER.—This patient is apparently intolerant of arsenic and further effort should not be made to give arsphenamine or any of its various modifications for some time to come. It would be advisable to examine the spinal fluid, to check the cardiovascular system for evidence of syphilitic aortitis, and to seek other manifestations of syphilis in the viscera or mucous membranes as the cause of the persistently positive Wassermann reaction before pushing ahead with treatment. If these examinations are negative, injections of a bismuth compound, at least two courses annually of twenty injections each, should be given for a period of four or five years.

As data with regard to the sex and age of the patient, duration of the infection, amount of the previous treatment, and symptomatology were omitted from the inquiry, further suggestions with regard to treatment are not possible. Occasionally patients are encountered who are sensitive to arsphenamine but who after a year's rest from treatment with it are able to tolerate the drug in small doses. The status of the syphilis and the need for drastic treatment are the factors that determine the need for further efforts at arsphenaminization in such cases.

SKIN CHANGES AFTER RADIUM TREATMENT

To the Editor:—A woman, aged 50, complains of much pain and discomfort at the site of x-ray and radium (?) treatment nine years ago for a goiter. The treatment was given both before and after thyroidectomy. She does not know whether it was malignant or not. The skin in this area is roughened, telangiectatic and adherent over the left sternomastoid muscle. No tumor is palpable. Various ointments have been used in order to make it feel more flexible and give relief to the pulling sensation and pain, but without relief. Any suggestion will be appreciated. Please omit name. M.D., Ontario.

ANSWER.—The palliative treatment of atrophy and telangiectasis of the skin following intensive x-ray or radium treatment is unsatisfactory. Avoidance of further irritation and the application of ointments constitute the only methods. Excision of the diseased skin followed by plastic repair must be considered. The decision as to the indications for surgery and the execution of the procedure are exceedingly difficult and should be entrusted only to one who is highly expert in this field. In the case cited, the location and extent of the lesion probably contraindicate surgery.

PSORIASIS OF FINGER NAILS

To the Editor:—I have a patient who has psoriasis of the finger nails. He has been to many skin specialists, receiving from time to time treatment containing salicylic acid for application to the nails, also light and x-ray treatments, and special diets. He has received best results from the x-ray and light treatments, but they require a long time and are very expensive. I should like to know whether you have any special treatment for this condition. I know it is chronic and it will take a long time before it heals. Kindly omit name. M.D., Pennsylvania.

ANSWER.—Psoriasis of the finger nails is much more resistant to therapy than psoriasis of the skin. The treatment employed is usually a modification of that used on the skin. The scraping of the nail with a glass slide to remove surface irregularities and débris, and the local application of an ointment is a most effective method of treatment. A 6 per cent salicylic acid and 6 per cent ammoniated mercury, or a 0.5 per cent dihydroxyanthranol ointment may then be rubbed into the nails. Roentgen therapy, while effective, must be used cautiously in order to obviate the occurrence of a radiodermatitis and other sequelae in the skin surrounding the nail. Restriction of fats and proteins in the diet has been recommended. The use of vitamin D and calcium by mouth, and the use of salicin, 1 Gm. in 30 cc. of peppermint water three times daily, is of value. Subcutaneous injections of sodium cacodylate, the use of sodium thiosulfate intravenously and the use of nonspecific therapy, such as whole milk intravenously, and autohemotherapy may be further adjuncts to local therapy. In the latter procedure, 10 cc. of the patient's blood is given by intramuscular injection at intervals of from five to seven days.

MULTIPLE SCLEROSIS

To the Editor:—A white woman, aged 21, has a brother, aged 30, who has had multiple sclerosis for the past ten years. An incomplete and rather unsatisfactory cursory study of the family tree reveals no other neuropathic cases. Is marriage in her case advisable? How great are the possibilities of her or her children developing multiple sclerosis or another neuropathic condition at a later date? Kindly omit name. M.D., Kansas.

ANSWER.—The etiology of multiple sclerosis is unknown. Heredity may be an important factor. The latter is a congenital predisposition in the cerebrospinal axis which under certain situations becomes activated and the protean signs of multiple sclerosis develop. There are, however, many cases of multiple sclerosis occurring in one member of a family with no abnormalities of any kind in any of the other members. It is suggested that a complete study of the patient's family tree be made. If no other evidence of familial or hereditary disorders is found, the possibility of the patient's children having multiple sclerosis or other neuropathic states is unlikely.

COST OF SKIN DISINFECTANT SOLUTION

To the Editor:—In THE JOURNAL, February 13, page 577, you published a query and minor note entitled "Solution for Use as Skin Disinfectant." You state that the authors were able to prepare the formula given at $1.60 a gallon, which is no doubt true, but you neglect to mention that they were using tax free alcohol. I have been preparing a similar formula for a customer but not at $1.60 a gallon. I have to pay a tax (federal) of $3.80 a gallon (wine) on nonbeverage alcohol, besides a state tax. WILLIAM H. BROOKE, Lincoln, Neb.

ANSWER.—The statement that the authors (J. A. Vaichulus and Lloyd Arnold, *Surg., Gynec. & Obst.* **61**:333 [Sept.] 1935) were able to prepare the solution for $1.60 a gallon is correct. They did so, however, working in the laboratories of a state university medical school and using tax free alcohol. With a federal tax of $3.80 a wine gallon on nonbeverage alcohol, and in some states an additional state tax, obviously this solution could not be prepared at the price stated except in an educational institution where tax free alcohol is available.

TESTS FOR BLOOD SUGAR

To the Editor:—I wish to purchase a simple inexpensive outfit for estimation of blood sugar—one that can be used in my office and requiring only a few drops of blood, yet fairly accurate. The Epstein and also the Lamotte outfits have been recommended to me. Which is considered the better one—or do you know of one better than either of these two at about the same price? The Epstein is priced at $17.50 and the Lamotte at $24. J. STREET BREWER, M.D., Roseboro, N. C.

ANSWER.—Either of the instruments mentioned should prove quite satisfactory for the purpose. No other device of a similar nature should prove materially superior to these instruments.

The LaMotte equipment has greater flexibility and can be more easily expanded to accomplish a greater variety of work, but if used only for fairly accurate blood sugar determinations either should do very well.

EXCISION FOR PIGMENTED MOLES

To the Editor:—A girl, aged 15 years, has a number of brown (small) areas of pigmentation over her face. Some of them appear like soft, flat moles. What is the best way to remove them without too much scarification? Is removal by means of fulguration with the electric needle or electrocoagulation with the usual diathermy machine dangerous because of rendering the areas of pigmentation malignant? Please omit name and address. M.D., Maine.

ANSWER.—Presumably the lesions mentioned are pigmented moles. Most specialists believe that it is better to let such lesions alone or to remove them by excision. Electrodesiccation and electrocoagulation might fail to destroy all the cells, and these methods are likely to produce disfiguring scars.

ETIOLOGY OF TABES

To the Editor:—Is there a form of tabes that is nonsyphilitic? FELIX S. MARTIN, M.D., Beaumont, Texas.

ANSWER.—Tabes is always of syphilitic etiology. There are pseudotabetic syndromes caused by a number of other diseases that involve the posterior columns. However, tabes itself involves more than the posterior columns and is always syphilitic.

Medical Examinations and Licensure

COMING EXAMINATIONS

STATE AND TERRITORIAL BOARDS

ALABAMA: Montgomery, June 22-24. Sec., Dr. J. N. Baker, 519 Dexter Ave., Montgomery.

ARIZONA: *Basic Science.* Tucson, June 15. Sec., Dr. Robert L. Nugent, Science Hall, University of Arizona, Tucson.

ARKANSAS: *Medical (Regular).* Little Rock, June 17-18. Sec., Dr. A. S. Buchanan, Prescott.

CALIFORNIA: *Reciprocity.* San Francisco, May 19. *Examinations.* San Francisco, June 28-July 1, and Los Angeles, July 19-22. Sec., Dr. Charles B. Pinkham, 420 State Office Bldg., Sacramento.

CONNECTICUT: *Basic Science.* New Haven, June 12. *Prerequisite to license examination.* Address State Board of Healing Arts, 1895 Yale Station, New Haven. *Medical (Homeopathic).* Derby, July 12. Sec., Dr. Joseph H. Evans, 1488 Chapel St., New Haven. *Medical (Regular).* Hartford, July 13-14. *Endorsement.* Hartford, July 27. Sec., Dr. Thomas P. Murdock, 147 W. Main St., Meriden.

DELAWARE: Dover, July 13-15. Sec., Medical Council of Delaware, Dr. Joseph S. McDaniel, Dover.

DISTRICT OF COLUMBIA: *Basic Science.* Washington, June 28-29 (probable dates). *Medical.* Washington, July 12-13. Sec., Commission on Licensure, Dr. George C. Ruhland, 203 District Bldg., Washington.

FLORIDA: Jacksonville, June 14-15. Sec., Dr. William M. Rowlett, Box 786, Tampa.

GEORGIA: Atlanta, June 9-10. Joint-Sec., State Examining Boards, Mr. R. C. Coleman, 111 State Capitol, Atlanta.

HAWAII: Honolulu, July 12-15. Sec., Dr. James A. Morgan, 48 Alexander Young Bldg., Honolulu.

ILLINOIS: Chicago, June 22-25 and Oct. 19-21. Superintendent of Registration, Department of Registration and Education, Mr. Homer J. Byrd, Springfield.

INDIANA: Indianapolis, June 22-24. Sec., Board of Medical Registration and Examination, Dr. William R. Davidson, 301 State House, Indianapolis.

IOWA: Iowa City, June 8-10. Dir., Division of Licensure and Registration, Mr. H. W. Grefe, Capitol Bldg., Des Moines.

KANSAS: Topeka, June 15-16. Sec., Board of Medical Registration and Examination, Dr. C. H. Ewing, 609 Broadway, Larned.

KENTUCKY: Louisville, June 9-11. Sec., State Board of Health, Dr. A. T. McCormack, 532 W. Main St., Louisville.

MAINE: Augusta, July 6-7. Sec., Board of Registration of Medicine, Dr. Adam P. Leighton, 192 State St., Portland.

MARYLAND: *Medical (Regular).* Baltimore, June 15-18. Sec., Dr. John T. O'Mara, 1215 Cathedral St., Baltimore. *Medical (Homeopathic).* Baltimore, June 8-9. Sec., Dr. John A. Evans, 612 W. 40th St., Baltimore.

MASSACHUSETTS: Boston, July 13-15. Sec., Board of Registration in Medicine, Dr. Stephen Rushmore, 413-F State House, Boston.

MICHIGAN: Ann Arbor and Detroit, June 9-11. Sec., Board of Registration in Medicine, Dr. J. Earl McIntyre, 202-204 Hollister Bldg., Lansing.

MISSISSIPPI: Jackson, June. Asst. Sec., State Board of Health, Dr. R. N. Whitfield, Jackson.

MISSOURI: St. Louis, June 3-5. State Health Commissioner, Dr. H. F. Parker, State Capitol Bldg., Jefferson City.

NEBRASKA: Omaha, June 8-9. Dir., Bureau of Examining Boards, Mrs. Clark Perkins, State House, Lincoln.

NEW HAMPSHIRE: Concord, Sept. 9. Sec., Board of Registration in Medicine, Dr. Fred E. Clow, State House, Concord.

NEW JERSEY: Trenton, June 15-16. Sec., Dr. James J. McGuire, 28 W. State St., Trenton.

NEW YORK: Albany, Buffalo, New York and Syracuse, June 28-July 1. Chief, Professional Examinations Bureau, Mr. Herbert J. Hamilton, 315 Education Bldg., Albany.

NORTH CAROLINA: Raleigh, June 21. Sec., Dr. Ben J. Lawrence, 503 Professional Bldg., Raleigh.

NORTH DAKOTA: Grand Forks, July 6-9. Sec., Dr. G. M. Williamson, 4½ S. 3rd St., Grand Forks.

OHIO: Columbus, June 1-4. Sec., State Medical Board, Dr. H. M. Platter, 21 W. Broad St., Columbus.

OKLAHOMA: Oklahoma City, June 9-10. Sec., Dr. James D. Osborn Jr., Frederick.

OREGON: *Medical.* Portland, June 15-17. Sec., Dr. Joseph F. Wood, 509 Selling Bldg., Portland. *Basic Science.* Corvallis, July 17. Sec., State Board of Higher Education, Mr. Charles D. Byrne, University of Oregon, Eugene.

PENNSYLVANIA: Philadelphia and Pittsburgh, July 6-10. Sec., Board of Medical Education and Licensure, Dr. James A. Newpher, Education Bldg., Harrisburg.

PUERTO RICO: San Juan, Sept. 7. Sec., Dr. O. Costa Mandry, Box 536, San Juan.

SOUTH CAROLINA: Columbia, June 22. Sec., Dr. A. Earle Boozer, 505 Saluda Ave., Columbia.

SOUTH DAKOTA: Rapid City, July 20-21. Director of Medical Licensure, Dr. B. A. Dyar, State Board of Health, Pierre.

TENNESSEE: Knoxville, Memphis and Nashville, June 17-18. Sec., Dr. H. W. Qualls, 130 Madison Ave., Memphis.

TEXAS: Austin, June 21-23. Sec., Dr. T. J. Crowe, 918-19-20 Mercantile Bldg., Dallas.

UTAH: Salt Lake City, June 21-23. Dir., Department of Registration, Mr. S. W. Golding, 326 State Capitol Bldg., Salt Lake City.

VERMONT: Burlington, June 16-18. Sec., Board of Medical Registration, Dr. W. Scott Nay, Underhill.

VIRGINIA: Richmond, June 17-19. Sec., Dr. J. W. Preston, 28½ Franklin Road, Roanoke.

WASHINGTON: *Basic Science.* Seattle, July 8-9. *Medical.* Seattle, July 12-14. Dir., Department of Licenses, Mr. Harry C. Huse, Olympia.

WEST VIRGINIA: Fairmont, July 12. Sec., Public Health Council, Dr. Arthur E. McClue, State Capitol, Charleston.

WISCONSIN: *Basic Science.* Milwaukee, June 5. Sec., Prof. Robert N. Bauer, 3414 W. Wisconsin Ave., Milwaukee. *Medical.* Milwaukee, June 29-July 2. Sec., Dr. Henry J. Gramling, 2203 S. Layton Blvd., Milwaukee.

WYOMING: Cheyenne, June 7. Sec., Dr. G. M. Anderson, Capitol Bldg., Cheyenne.

NATIONAL BOARD OF MEDICAL EXAMINERS SPECIAL BOARDS

Examinations of the *National Board of Medical Examiners and Special Boards* were published in THE JOURNAL, May 8, page 1671.

California Reciprocity and Endorsement Report

Dr. Charles B. Pinkham, secretary, California State Board of Medical Examiners, reports 34 physicians licensed by reciprocity and 14 physicians licensed by endorsement from Jan. 2 through Feb. 10, 1937. The following schools were represented:

School	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
University of Colorado School of Medicine		(1933)	Colorado
George Washington University School of Medicine		(1933)	Ohio
Howard University College of Medicine		(1927)	Dist. Colum.
Hahnemann Medical College and Hospital, Chicago		(1904)	N. Dakota
Northwestern University Medical School		(1929)	Illinois
Rush Medical College		(1932)	Illinois
Keokuk Medical College, Iowa		(1908)	Iowa
State University of Iowa College of Medicine		(1925), (1927), (1930)	Iowa
Tulane University of Louisiana School of Medicine		(1935)	Alabama
Tufts College Medical School		(1935)	Maine
University of Michigan Medical School		(1931)	Michigan
St. Louis University School of Medicine		(1933)	Missouri
Washington University School of Medicine		(1921)	Oklahoma
Creighton University School of Medicine		(1922), (1930)	Nebraska, (1931) Utah
John A. Creighton Medical College		(1908), (1915), (1917)	Nebraska
University of Nebraska College of Medicine		(1932), (1934)	Nebraska
Columbia Univ. College of Physicians and Surgeons		(1921), (1930)	New York
Long Island College Hospital		(1924)	New York
New York Homeopathic Med. Col. and Flower Hosp.		(1932)	New York
Syracuse University College of Medicine		(1932)	New York
University of Rochester School of Medicine		(1933)	New York
Woman's Medical College of Pennsylvania		(1920)	Ohio
Baylor University College of Medicine		(1935)	Texas
University of Texas School of Medicine		(1935)	Texas
University College of Medicine, Virginia		(1897)	Alaska
University of Toronto Faculty of Medicine		(1926)	New York

School	LICENSED BY ENDORSEMENT	Year Grad.	Endorsement of
University of Arkansas School of Medicine		(1929), (1930)	U. S. Navy
College of Medical Evangelists		(1931, 2)	N. B. M. Ex.
Stanford University School of Medicine		(1935)	N. B. M. Ex.
Northwestern University Medical School		(1930)	N. B. M. Ex.
Harvard University Medical School		(1932)	N. B. M. Ex.
University of Minnesota Medical School		(1931)	U. S. Navy
Long Island College Hospital		(1925)	N. B. M. Ex.
Duke University School of Medicine		(1934)	N. B. M. Ex.
University of Oklahoma School of Medicine		(1930)	U. S. Navy
Jefferson Medical College of Philadelphia		(1924), (1932)	U. S. Navy
Medical College of Virginia		(1915)	U. S. Navy

Missouri Reciprocity and Endorsement Report

Dr. H. F. Parker, State Health Commissioner, reports 11 physicians licensed by reciprocity and 2 physicians licensed by endorsement at the meeting held in Jefferson City, Jan. 30, 1937. The following schools were represented:

School	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
College of Physicians and Surgeons, Los Angeles		(1912)	Oklahoma
Northwestern University Medical School		(1904)	Kansas
University of Kansas School of Medicine		(1935)	Kansas
St. Louis University School of Medicine		(1929)	Alabama
Washington University School of Medicine		(1932)	Kansas
Ensworth Central Medical College, Missouri		(1906)	Kansas
Creighton University School of Medicine		(1936)	Kansas
University of Nebraska College of Medicine		(1935)	Nebraska
University of Oklahoma School of Medicine		(1934, 2)	Oklahoma
Hahnemann Medical Col. and Hosp. of Philadelphia		(1935)	Penna.

School	LICENSED BY ENDORSEMENT	Year Grad.	Endorsement of
Northwestern University Medical School		(1934)	N. B. M. Ex.
Cornell University Medical College		(1934)	N. B. M. Ex.

North Dakota January Examination

Dr. G. M. Williamson, secretary, North Dakota State Board of Medical Examiners, reports the oral, written and practical examination held in Grand Forks, Jan. 5-8, 1937. The examination covered 13 subjects and included 100 questions. An average of 75 per cent was required to pass. Six candidates were examined, all of whom passed. One physician was licensed by endorsement. The following schools were represented:

School	PASSED	Year Grad.	Per Cent
Northwestern University Medical School		(1934) 90, (1936)	83
Tufts College Medical School		(1935)	80.2
University of Minnesota Medical School		(1925) 82.8, (1936)	80, 85

School	LICENSED BY ENDORSEMENT	Year Grad.	Endorsement of
Northwestern University Medical School		(1936)	N. B. M. Ex.

Book Notices

Artificial Pneumothorax: Experience of the London County Council. By F. J. Bentley. Medical Research Council, Special Report Series, No. 215. Paper. Price, 1s. 6d. Pp. 94, with 5 illustrations. London: His Majesty's Stationery Office, 1936.

Bentley has compared 677 persons treated by artificial pneumothorax with 3,329 treated by bed rest and other measures in the absence of collapse therapy. The average time over which artificial pneumothorax treatment was continued was 18.8 months, but of the patients alive at the end of the study the treatment had been continued over a period of approximately three years. Two hundred and sixty-six of the 677 patients treated by pneumothorax were followed for a minimum period of three years and 411 of the patients were followed for a period of five years, while the 3,329 treated without collapse therapy were followed for a period of five years. The 411 observed for five years showed a gain in the number alive of 19.8 per cent at the end of five years over those treated conservatively. Of the total 677 treated by artificial pneumothorax, in 267 the collapse was incomplete and of this number only 50 per cent were alive at the end of three years. Of the remaining 208 patients with complete collapse 65.9 per cent were alive after three years, while among those who had only unilateral disease 77.4 per cent were alive at the end of three years. Of those who survived in this pneumothorax group, 64 per cent had quiescent disease after five years while only 38 per cent of those treated conservatively were in this stage at the end of five years. The author points out that there is also a definite increase in the working capacity in the pneumothorax group. He observed that the longer disease exists the more likely it is to involve both lungs and the greater the chances of adhesions developing which prevent complete collapse. He is of the opinion that it is unwise to wait too long before instituting artificial pneumothorax and that when the disease is unilateral and tubercle bacilli are found in the sputum the treatment should be considered at once. He is cognizant of the fact that some such patients will control their disease but that too frequently without artificial pneumothorax it tends to advance. He also calls attention to the fact that, if the disease is brought under control without collapse therapy, among those who must do manual work there is an "awful risk" of reactivation within two or three years. Moreover, in patients who do break down by the time treatment is instituted for the second time the disease is usually too advanced for any kind of therapy to be of avail. Bentley states that in 1934 only approximately 10 per cent of the patients being treated for pulmonary tuberculosis were on artificial pneumothorax treatment. He does not believe that this percentage will be definitely increased because of the lack of suitable cases admitted to the institutions. In spite of a review of the literature, he bases his statement on the observation of hospital cases alone, ignoring the case-finding methods now in practice in many sections with its resultant increase in suitable cases for artificial pneumothorax and ambulatory pneumothorax for the early case. However, this study shows that artificial pneumothorax even in the type of case observed by Bentley is decidedly worth while, since 19.8 per cent more so treated survive than among those who are treated by institutional care alone. Its importance lies in further evidence from a hitherto unreported section that pneumothorax constitutes the most valuable single treatment of tuberculosis now extant.

Christian R. Holmes, Man and Physician. By Martin Fischer. Cloth. Price, $4. Pp. 233, with illustrations. Springfield, Illinois, & Baltimore: Charles C. Thomas, 1937.

Here in a beautiful volume as artistically written as it is beautifully printed, Martin Fischer tells the story of the life of Christian Holmes of Cincinnati. The book is not likely to command a tremendous audience and it has the personal qualities that are certain to make it appeal to the audience that was personally interested in Holmes and his accomplishments.

In 1885 Christian Holmes came to the Cincinnati Hospital. From that time on his entire life was devoted primarily to its interests. He was to rebuild it and eventually to make it the great institution which it is today. The life of Christian Holmes is intimately bound also with the story of the Fleischmann family. The history of all our great institutions is largely the history of the men who live for them. This is particularly true of the medical institutions of Cincinnati. The life of Christian Holmes, as narrated by Martin Fischer, traces the intricate web of politics and financing that was created to meet successfully the conditions that existed. As in other instances, the creation of the institution is only the beginning. Thereafter come the questions of maintenance. It is not sufficient merely to set up certain standards. Thereafter comes the battle against those without ideals who continually attempt to break down standards. These conflicts and struggles made the life of Christian Holmes particularly dramatic. He had frequent opportunities to abandon his projects in Cincinnati for a new career elsewhere, many times perhaps even a greater one; but he preferred to undergo the exactions and vicissitudes of his chosen home. His story includes the building not only of hospitals but also of the medical school and then a successful marriage of the two organizations into a great service and teaching institution.

An exceedingly interesting feature of this remarkable volume are the side-headings on the individual pages, which are aphorisms from the great literature of the world reflecting on the career of the remarkable man whom the book concerns. The volume will be read with interest by every one who has followed the course of medical education and medical development in the United States during the particularly active last quarter century.

L'ostéosynthèse au point de vue biologique: Influence de la nature du métal (étude expérimentale). Par G. Menegaux, chirurgien des hôpitaux de Paris, et D. Odiette, assistant à l'Institut de cancer. Préface du Professeur J. Verne. Paper. Price, 35 francs. Pp. 175, with 71 illustrations. Paris: Masson & Cie, 1936.

For more than two years Menegaux and Odiette have been studying the reaction of bone to various metals, from the biologic point of view, because they have found that rarefying osteitis, subsequent pathologic fracture, and other clinical failures resulted from the use of metal fixation devices in fractures. After performing more than two thousand tissue culture experiments and more than a hundred operations on animals, they feel qualified to declare which metals are desirable for use in bone.

Tissue cultures of fibroblasts and osteoblasts from the chick embryo and fibroblasts from the human embryo (cases of extrauterine pregnancy) were subjected to the effects of forty different metals and alloys. Careful microscopic studies of the cultures and quantitative analyses were made. In the animal experiments, metal disks were placed under the periosteum, wire loops were placed in and around the bone, and Lane plates and screws of different metals were applied.

The results of these detailed studies lead the authors to state that iron, steel, bronze-aluminum, copper and magnesium have a very toxic effect on bone. They are therefore condemned as unfavorable for bone surgery. If, however, their use is unavoidable they should be removed as soon as they have served their function. Most of the pure metals, the alloys of aluminum, and most stainless steels are moderately toxic in their action on bone. The nontoxic metals are gold, lead and aluminum (all of which are soft in their pure state and not practical to use), and three of the stainless steels (V2A Extra, Nicral D and Platino-Stainless D). The authors condemn plated metal appliances, moreover, because the plating might crack and permit the exposure of the iron or steel base, which is toxic.

The authors discuss the possibility that when two metals are used in the same bone there may be some electrolytic reaction which would be inhibitory to bone growth. However, in none of their experiments could they prove this and they dismiss it as a negligible factor. This is contradictory to the observations of Venable, Beach and Stuck in this country, who have recently demonstrated that the use of appliances of different metals in the same bone induces electrolytic reactions that are destructive to bone.

Despite their extreme care and thoroughness, Menegaux and Odiette have simply repeated the experimental approach and reemphasized essentially the same conclusions as many previous workers in this field. A distinct contribution, however, is the description of a method for growing osteoblasts in hanging

drops wherein the growing cells can be clearly observed and studied experimentally. The book is illustrated with excellent photomicrographs, which are well titled and readily demonstrate the points the authors seek to establish.

Pharmacognosy. By Edmund N. Gathercoal, Ph.G., Ph.M., Professor of Pharmacognosy, University of Illinois College of Pharmacy, and Elmer H. Wirth, Ph.C., Ph.D., Assistant Professor of Pharmacognosy, University of Illinois College of Pharmacy. Cloth. Price, $7.50. Pp. 852, with 373 illustrations. Philadelphia: Lea & Febiger, 1936.

Pharmacognosy means "the entire knowledge of drugs." Modern pharmacognosy, however, does not include medicinal or pharmacologic action. The drugs discussed in this book are limited to those of plant and animal origin. Synthetics and inorganic drugs, if mentioned at all, are incidental; official chemical substances, however, obtained from crude drugs get considerable attention. The Greek Herbal of Dioscorides (A. D. 512) may be considered the first textbook of pharmacognosy and Dioscorides a teacher of pharmacognosy. In fourteen centuries much water has run over the pharmacognosy mill, and naturally great advances have been made. Up to the seventeenth century the best books on medical botany were still commentaries on the Herbal, which was also the historic source of much of our therapy. Its descriptions were of the gross specimens; today the emphasis is on microscopic structure and chemical, biologic and physical tests. The authors give a list of thirty or more important books on the subject with due credit. It is this scientific spirit, combined with clarity, completeness and modernity, that bespeaks a wide adoption of the book. Pharmacognosy today demands a knowledge of botany, zoology, bacteriology, chemistry, physics and crystallography. The book emphasizes these sciences as applied to pharmacognosy. It is the very extent of these subjects that has restricted the teaching of pharmacognosy in the medical schools. Important in the medical curriculum for centuries, pharmacognosy now receives scant recognition, not because it is underestimated as a scientific discipline but because other subjects of more pressing need have supplanted it. There are, however, times when questions arise in practice, where the physician will want more information on a drug than is given in the Pharmacopeia, and where this book will furnish the information in a reliable and concise form. Such modern therapeutic agents as vitamins, vaccines and bacteriologic products are discussed. For students of pharmacognosy we know no better book. The style is clear; the descriptions are concise and accurate. The numerous illustrations are excellent. Physicians and general scientists interested in subjects beyond their special fields will find it a valuable source of information. Laboratory workers in pharmacology, chemistry and food and drug inspection work will find it a good reference book.

The Queen Charlotte's Text-Book of Obstetrics. By Trevor B. Davies, M.D., F.R.C.S., F.C.O.G., Gynæcological Surgeon, Hospital for Women, Soho, and others. Fourth edition. Cloth. Price, 18s. Pp. 674, with 295 illustrations. London: J. & A. Churchill, Ltd., 1936.

This book, like the three previous editions, was written by the active staff members of the Queen Charlotte's Maternity Hospital. A number of changes and improvements have been made particularly in the chapters dealing with puerperal infection. This is because during the last few years important contributions have been made to the subject of puerperal infection by Leonard Colebrook in the Queen Charlotte's Research Laboratories. The authors have altered their treatment of eclampsia, for they have given up the use of colon lavage, sweating and veratrone. In a series of 841 cases of placenta praevia there were no deaths among the 116 patients who delivered spontaneously, one death among sixty-one cesarean section (1.6 per cent), and much higher maternal death rates for the other forms of delivery. In reviews of two previous editions of this book, it was pointed out that illustrations were reproduced or copied from De Lee's textbook but that no mention was made of this fact. In the present edition proper credit is given to De Lee for the illustrations that were taken from his book. In 1930 an isolation block was opened for the study and treatment of puerperal sepsis. In this block it has been found that 19 per cent of the patients transferred because of fever from the wards of the main hospital showed an infection due to Streptococcus haemolyticus, whereas 60 per cent of the women transferred from the district had an infection due to this organism. This is contrary to the generally accepted view that the incidence of potential serious infection is greater among women delivered in hospitals than among those delivered in their own homes. In the third edition the authors quoted Kerr and Holland's statistics, which were published in 1921 and which showed a death rate of 7 per cent for 4,160 classic cesarean sections, as contrasted with a mortality of 15 per cent for thirty-three lower segment operations. It is unfortunate that the authors repeat these fifteen year old statistics in the fourth edition, especially because the thirty-three cervical operations represented the first crude efforts of a few British obstetricians. In spite of the poor showing of the cervical operations in 1921, one of the authors of the 1921 report (Kerr) is today the greatest advocate of the low cervical operation in the British Isles. Furthermore, world-wide statistics prove the superiority of the cervical cesarean section over the classic operation. This book ranks among the best in Great Britain, and the appearance of a fourth edition within nine years attests its great popularity.

Principles of Chemistry: An Introductory Textbook of Inorganic, Organic and Physiological Chemistry for Nurses and Students of Home Economics and Applied Chemistry, with Laboratory Experiments. By Joseph H. Roe, Ph.D., Professor of Biochemistry, School of Medicine, George Washington University. Fourth edition. Cloth. Price, $2.75. Pp. 475, with 41 illustrations. St. Louis: C. V. Mosby Company, 1936.

This is intended to be a combined textbook and laboratory manual for the chemistry, inorganic, organic and physiologic, taught in nurses' training courses and in some home economic courses. It is strictly up to date and well written. In a textbook designed for courses in which the amount of time for the study of chemistry is very limited, much of the value of the text depends on the wisdom of the author in choosing what subjects to include and what to leave out. Quite naturally, the treatment of the inorganic part of the text is the largest because in this part the introductory subjects, which include chemical laws, solutions, equations, units of measure and the like, are treated. However, this part of the text is not complete enough for an ordinary freshman course in chemistry. The organic and physiologic portion of the text are combined. The portion dealing with pure organic chemistry is abbreviated: that dealing with such subjects as metabolism, nutrition, elimination, hormones and vitamins is given somewhat longer treatment. This portion of the text, more than the former, relates to what are considered facts instead of the reasons for the facts. It is convenient for the student to have a laboratory manual combined with the text. In the laboratory manual portion of this volume there are blank pages for notes. Students who would use this book need instruction and outlines for writing up experiments, in order to classify in their own minds what they have done, what they have observed and what they have concluded. If these blank pages are used for taking notes in the laboratory they will be helpful; if they are used as the one and only laboratory notebook, an exceptional laboratory teacher will be required to get more than a hodgepodge.

Geschichte der physiologischen Chemie. Von Dr. Fritz Lieben, Privatdozent an der Universität Wien. Paper. Price, 20 marks. Pp. 743. Leipzig and Vienna: Franz Deuticke, 1935.

The history of physiologic chemistry is presented in two main sections and from two different points of view. In the first part are the usual historical development of chemistry—the chemistry of the ancients, the iatrochemical and phlogiston periods, and then chapters on Lavoisier to Berzelius, Liebig and his contemporaries in Germany, the great French chemists of the nineteenth century and the great German chemists of the nineteenth century. Unfortunately, the sources for the periods prior to the nineteenth century are the usual histories of chemistry. It would seem that more use of original ancient, medieval and eighteenth century literature would have opened up many household, agricultural, medical and industrial practices, customs and superstitions of special biochemical interest in the light of present knowledge. The second part is not so much a history of the science as a chronologically arranged descriptive treatment of twelve special subdivisions of biochemistry. These chapters cover nutrition, vitamins and metabolism; muscle chemistry, metabolism and dynamics; protein chemistry and metabolism; fermentations; the oxygen-carrying property of the blood; bile composition and function; lipins and their metabolism; carbohydrates and their metabolism; nucleic acid

chemistry and metabolism; the composition of urine and the significance of the results; inorganic constituents and their needs in living matter, and hormones. Each in turn is treated briefly with respect to the ancient and medieval views and at greater length their development since the time of Lavoisier. Each chapter closes with a statement of the main sources of the material presented. Curiously, nothing is stated as to the development of the physical-chemical aspects, the importance of special analytic methods, concepts and tools, and the absolute necessity of the micro methods of Pregl for the developments in vitamins and endocrine principles. The work includes good author and subject indexes. It is a valuable reference work for every teacher of biochemistry from the standpoint of historical development, although one might have desired more information on the erroneous views of the earliest and later centuries and the reasons and difficulties involved.

A Synopsis of Surgical Anatomy. By Alexander Lee McGregor, M.Ch., F.R.C.S., Lecturer on Surgical Anatomy, University of the Witwatersrand. With a foreword by Sir Harold J. Stiles, K.B.E., F.R.C.S. Third edition. Cloth. Price, $6. Pp. 664, with 648 illustrations. Baltimore: William Wood & Company, 1936.

This textbook is written with the object of presenting valuable facts to the senior student and practitioner. It consists of two parts: the anatomy of the normal and the anatomy of the abnormal. In the first part surgical anatomy is considered with reference to the various regions of the body. The head, neck, chest, abdomen and pelvis with their contents are taken up, followed by the vertebra and the bones of the extremities. In each region the various nerves, muscles, blood vessels and lymphatics are considered with reference to their surgical importance. In the second part the same systematic plan is followed with a discussion of the surgical conditions that may result from developmental and abnormal anatomic errors. The omission of all but the essential points makes their surgical importance clear in a few brief sentences. The anatomic basis and description of certain clinical tests and the anatomic advantages of certain operations is included, making the text more interesting to the student and the clinician. There are 648 simple line diagrammatic drawings to illustrate a text of 623 pages. These are particularly designed to permit one to see almost at a glance the normal and abnormal anatomic points of interest. The book is not only a most instructive synopsis of anatomy but is carefully planned to promote its practical application to clinical diagnosis and operative surgery.

Mind, Medicine and Metaphysics: The Philosophy of a Physician. By William Brown, D.M., D.Sc., F.R.C.P. Cloth. Price, $3. Pp. 294. New York & London: Oxford University Press, 1936.

This is a collection of essays and lectures dealing with psychologic, philosophic, and religious aspects of medicine. The author is a physician, a psychologist and a philosopher, holding official positions in each of these capacities. Just as versatility is said to be the curse of genius, so this diversity of interests seems to have impaired the author's ability to take a pronounced stand with respect to any of them. He commends psychoanalysis with reservations; he takes the Oxford movement seriously enough to point out some of its obvious psychologic faults; he reports the case of a hypnotic trance in a medium controlled with a psychogalvanometer. He discusses the psychology of international relations, the sexual problems of adolescents, the relation of religion to psychology. Whether or not one shares the author's views about many of these things, there is little fault to find with what he says; it is rather that his restraint, his feeling that he must not go too far in commending or criticizing anything, his relatively superficial and often repetitious treatment of this wide variety of topics makes the book rather undistinguished. It cannot be said to represent anything except the philosophic ruminations of a widely read scientist with religious inclinations. His criticism of the Oxford movement would indicate that this is taken more seriously in the country of its origin than in the United States. The author shows that from the psychologic standpoint its technics are neither valid nor adequate as devices for consistently altering personalities, but, having rather carefully demonstrated this fact, he ends by "hoping" that he has not been unnecessarily critical and that "the movement itself may become deepened as it goes on and that the conversions . . . will become consolidated by deep religious development. . . ."

Experimental Physiology with Anatomical and Mechanical Illustrations and an Appendix of Technical Data. By Maurice B. Visscher, Ph.D., M.D., Professor of Physiology and Head of the Department in the University of Illinois, Chicago, and Paul W. Smith, Ph.D., Associate in Physiology in the University of Illinois. Cloth. Price, $3.25. Pp. 191, with 75 illustrations. Philadelphia: Lea & Febiger, 1935.

The experiments described in this laboratory manual are obviously adapted to the equipment and conditions of the authors' laboratory but most of them are readily adaptable to any equipment. One especially valuable feature of the book is the extensive use of new and original illustrations of apparatus and operative procedures. Another is the appendix of twenty pages, in which are found directions for the preparation of special solutions, dosages of drugs commonly used in laboratory work, formulas and other general information. There are 113 experiments listed, some of which are adaptations of classic experiments, others of original design. In their efforts to "modernize" some of those in the first group the authors appear to have overdone the job to some extent, as the revisions have neither added to the illustrative value of the experiments nor clarified the description of the procedures involved. Also there are some poorly advised efforts to apply physicochemical principles, such as the calculation of the osmotic pressure of plasma proteins on page 24. Any one acquainted with the principle of the Donnan equation is aware that the conditions of the experiment as described cannot provide the exactitude that is implied. The experiment would make a better impression on the student if the calculation were omitted entirely. This criticism applies as well to the calculation of the osmotic work of the kidney outlined on page 164. There are many other experiments more suitable for the purpose. However, individual instructors may omit requirement of these calculations if they desire and may still find the manual of value as a laboratory guide for students of any grade.

Official and Tentative Methods of Analysis of the Association of Official Agricultural Chemists. Editorial Board: W. W. Skinner, Chairman. Committee on Editing Methods of Analysis: E. M. Bailey (Chairman), and others. Fourth edition, 1935. Cloth. Price, $5; for 5 or more copies, $4, each. Pp. 710, with 52 illustrations. Washington, D. C.: Association of Official Agricultural Chemists, 1936.

This issue is presented in accordance with the original plan to publish a revision every five years. The aim of the work is to include all the approved methods of the association for the analysis of agricultural products and of related substances. The procedures are given in clear, concise statements with no typical analyses. The noteworthy feature is the clarity of composition. The subject matter and arrangement closely resemble those of the third edition. A few unsatisfactory or unimportant methods have been omitted, while other chapters, such as that on beers, wines and distilled liquors, have been expanded. One chapter, "Nuts and Nut Products," which was mentioned in the third edition for future inclusion, has been added. Six other subjects are still being contemplated. Appendix I, dealing with preparation and standardization of solutions, is a valuable addition. The book is an authoritative analytic guide but is not a great improvement over the preceding edition.

La diphtérie. Par G. Carrière, professeur de clinique médicale à la Faculté de médecine de l'Université de Lille. Paper. Price, 35 francs. Pp. 213, with 45 illustrations. Paris: Masson & Cie, 1936.

In the present day a treatise on diphtheria is not likely to attract wide attention. The literature is voluminous and the average physician undoubtedly feels that he has a satisfactory knowledge of the disease. Carrière, however, has presented the subject in a remarkably complete and concise manner. One can readily appreciate when reading this book that the author's thirty-five years' experience has permitted him to discuss phases of diphtheria which are not mentioned in the average textbook. The gravity of diphtheria when associated with streptococcic infection receives comment. It is also asserted that measles and scarlet fever lessen immunity to diphtheria. The author has observed tracheobronchial diphtheria only three times in a period of thirty years but states that bronchopneumonia was noted in four fifths of the necropsies (diphtheria) in infantile clinics from 1900 to 1925. Saturation of the atmosphere about diphtheria patients with antiseptic vapors is recommended. With regard to dosage of diphtheria antitoxin, it is stated that "500 units per kilo of weight is curative, necessary and suf-

ficient." Tests for sensitivity are always made from four to five hours before injection of antitoxin. Some of the author's views with respect to treatment would in all probability not be acceptable to most clinicians in this country. The value of antiseptic vapors about the patient seems doubtful and the weight method of determining dosage of antitoxin unsatisfactory. The book is divided into twenty-four chapters. There are a number of illustrations, including three plates in color; also graphs and tables. It is well worth reading and will prove of value to any one interested in the subject.

Bureau of Legal Medicine and Legislation

MEDICOLEGAL ABSTRACTS

Workmen's Compensation Acts: Liability for Fee of Physician Not Authorized to Treat Compensation Cases.—The legislature of New York, in 1935, amended the workmen's compensation act to give to an injured employee, except under certain enumerated conditions, the right to select the physician to treat him, such selection to be made from a panel of physicians specially authorized to treat compensation cases in the following manner:

> The commissioner shall upon the recommendation of the medical society of each county or of a board designated by such county society, or by a board representing duly licensed physicians of any other school of medical practice, authorize physicians licensed to practice medicine in the state of New York to render medical care under this chapter. If, within sixty days after the commissioner requests such recommendations, the medical society of any county or board fails to act, or if there is no such society in the county, the commissioner shall designate a board of three qualified physicians, who shall make the requested recommendations.

No physician not so authorized by the industrial commissioner may collect any fee for treatment rendered to compensation patients. The plaintiff, a physician, treated an injured employee, apparently at the request of the employer. He thereafter brought suit against the employer in the supreme court, special term, New York County, to enforce payment of his bill. In his complaint, however, he did not allege that he had been duly authorized to render medical care under the workmen's compensation act. The sole question before the court was whether the failure to include such an allegation in the complaint rendered it defective so as to entitle the employer to a dismissal of the case.

Prior to 1935, the court said, while the workmen's compensation act provided for medical care and treatment of injured employees, there was scant provision regulating the rendering of such treatment. The guiding principle was that the employer was to provide medical care, and he it was who in the ordinary case chose the physician. The industrial board had no jurisdiction to make an award for hospital bills or physicians' services except in two cases: (1) where the employee requested his employer to furnish medical treatment and the employer neglected or refused to do so, and (2) where the nature of the injury required such treatment and the employer or his superintendent or foreman, having knowledge of such injury, neglected to provide the treatment. In other cases the employer became directly obligated to the physician, who had his remedy in the courts and not under the workmen's compensation act. Protests arose from various sources against abuses that had grown up involving the medical care of injured workmen. A joint committee of the Medical Society of the State of New York and the Academy of Medicine was appointed to study the situation and a report by this committee was made the subject of a special message by the governor to the legislature. As a result the act was amended in 1935. One purpose of the particular amendment under discussion, said the court, was to restrict the treatment of all compensation cases to physicians authorized by the industrial commissioner to render such treatment. Permitting the employee to select his physician is, the court emphasized, a salutary step, since it was the absence of such right that gave rise to so many abuses under the old law. Whether the physician is chosen by the employee or, under certain enumerated conditions, by the employer, one thing is implicit in the amended act, the physician must be one authorized to render medical treatment in workmen's compensation cases. To hold that an employee must select a physician duly authorized under the act, and, if the choice be one which the employer may exercise, to permit him to select any physician whether authorized to render services under the act or not, would lead to unjust results. If the plaintiff in the present action, the court said, is entitled to judgment the desirable benefits of the 1935 amendments to the compensation act will be to a large extent nullified. Any unauthorized physician would then be entitled to bargain with employers for the treatment of injured employees. Whenever the employee does not object, and in many cases through pressure from the employer or through ignorance of the law he will not object, such unauthorized physicians would be in a position to provide medical care for fees at variance with the prescribed schedules of minimum fees and without being subject to the disciplinary provisions of the amended act. The door would then be open to a revival of the very abuses which the amended act was intended to cure, the cut-throat competition and commercialization of compensation medical practice, the improper "lifting" of cases and the inadequate and inefficient treatment of injured workers.

While the practice of medicine is a property right, it is one which is subject to the most stringent regulations. The right to practice medicine must yield to the paramount right of the state to protect health by any rational means. A state may not only impose requirements prerequisite to a license to practice medicine generally, but it may impose additional requirements as a condition to permitting a licensed physician to concontinue to practice and to treat employees under the workmen's compensation act. The right to practice medicine is not essentially different from the right to practice law. The fees of attorneys in compensation cases have been strictly limited and the courts have upheld those limitations. The requirement that only authorized physicians treat compensation cases bears a reasonable relationship to the orderly and efficient administration of the act. In concluding, the court summarized its holding as follows:

> (1) That the Legislature has power to abrogate in whole or in part the common-law rights of physicians who treat workmen's compensation cases. By that I mean, for example, that the Legislature has power to provide that a physician's exclusive remedy to recover payment for treating compensation cases shall be under the Workmen's Compensation Law and not in the courts; that it may by reasonable provisions restrict and limit the contractual relations between physicians on the one hand and employers or injured employees on the other, and that such reasonable restrictions may be made applicable not alone to the awards to physicians under the Workmen's Compensation Law, but to actions for services in the courts as well;
>
> (2) The requirement that only physicians who are specially authorized by the Industrial Commissioner for that purpose may treat injured employees in accordance with the provisions of the Workmen's Compensation Law is a reasonable one, calculated to accomplish the humane objects of that statute and to do away with abuses and evil practices that arose in connection with its administration;
>
> (3) No physician under the amended statute is permitted to treat compensation cases or entitled to be paid therefor unless he is authorized by the Industrial Commissioner, and this applies whether the physician is chosen by the employee or by the employer;
>
> (4) Assuming but not deciding that a physician chosen by an employer to treat a compensation case may, despite the amended statute, sue the employer in the courts for payment of his services, as a condition to recovery he is required to allege and prove that he was duly "authorized" to render medical care to injured employees under the Workmen's Compensation Law.

For the reasons stated, the court granted the motion made by the employer to dismiss the complaint.—*Szold v. Outlet Embroidery Supply Co., Inc. (N. Y.), 289 N. Y. S. 411.*

Paternity: Determination by Blood Grouping Tests.—The defendant was convicted on a charge of fornication and bastardy. He appealed to the superior court of Pennsylvania contending, among other things, that the trial court erred in refusing to require the prosecutrix to submit herself and her baby for a blood grouping test to determine the paternity of the baby, and in refusing to continue the trial of the case pending the taking of such tests.

It was not an abuse of discretion, said the superior court, for the trial court to refuse to continue the case after the jury had been sworn. Furthermore, even had the petition been

presented earlier it would have been the duty of the trial court to refuse the motion. At common law, the defendant did not have a right to a physical examination of the plaintiff in an action for personal injuries. In personal injury cases in which the amount of damages to which a plaintiff is entitled is at issue, the rule in Pennsylvania is that it is within the discretion of the trial court to require the person injured to submit to a physical examination for the purpose of determining the extent of the injury. The exercise of such power, however, is a matter within the discretion of the trial court and only subject to appeal when such discretion is abused. But, said the court, we are here concerned not with a civil but a criminal case in which the commonwealth is the plaintiff. To refuse to permit a criminal case to proceed until a recalcitrant witness submits to an examination would deprive the commonwealth of its right and duty to enforce the criminal laws. In addition, the granting of the prayer of the defendant's petition would result in more than a mere permission to inspect the body of the prosecutrix, for it was proposed to insert a needle in her body and withdraw a small amount of blood for an examination. While such an operation is not regarded as entailing any serious danger to health, it cannot be said that there is no danger, for there is always present some risk of infection. Furthermore, the record in the present case, the court said, was entirely void of proof as to the scientific accuracy of blood grouping tests and such tests have not attained such standing as to justify a court in taking judicial notice of their value. Until the legislature finds that blood grouping tests have attained such scientific standing as to possess probative value as to paternity, the courts have not the power in a criminal case such as the one here involved to compel a prosecutrix to submit her body for blood tests.

While holding that the trial court ruled correctly with respect to the matter of blood grouping tests, the superior court felt impelled to reverse the judgment of conviction for other reasons and remanded the case for a new trial.—*Commonwealth v. English (Pa.), 186 A. 298.*

Workmen's Compensation Acts: Compensability of Tuberculosis.—The workmen's compensation act of Connecticut defines a personal injury for which compensation may be allowed as including only an "accidental injury which may be definitely located as to the time when and the place where the accident occurred, and occupational disease." An occupational disease is defined as "a disease peculiar to the occupation in which the employee was engaged and due to causes in excess of the ordinary hazards of employment as such." The claimant contracted tuberculosis in the course of her employment by the defendants, manufacturers of women's dresses. The compensation commission awarded the claimant compensation under the workmen's compensation act, the superior court reversed that award, and the claimant appealed to the Supreme Court of Errors of Connecticut.

To constitute an occupational disease within the meaning of the workmen's compensation act, said the court, the disease must be a natural incident of a particular kind of employment, one which is likely to result from that employment because of its inherent nature. The act does not embrace a disease which results from the peculiar conditions surrounding the employment in a type of work which would not from its nature be more likely to cause the disease than would other kinds of employment carried on under the same conditions. Thus, pneumoconiosis resulting from wet grinding is an occupational disease. *Rousu* v. *Collins Co.,* 114 Conn. 24, 157 A. 264. Pneumonia, however, resulting from exposure incurred in highway construction is not. *Galluzzo* v. *State,* 111 Conn. 188, 149 A. 778. In the present case, the claimant's disease resulted from the conditions of her particular employment in the factory. Other trades, however, carried on under those conditions would have been as likely to cause the disease as the manufacture of dresses. To award compensation to the claimant, therefore, would be in contravention of the legislative intent as embodied in the workmen's compensation act. The case of the claimant evoked the sympathy of the court, for the record disclosed that the tuberculosis from which she suffered was contracted because of conditions of employment which never should have been permitted to exist. But if such cases, the court said, are to be brought within the act, the legislature must do it. The judgment of the superior court remanding the case with instructions to dismiss the claim was therefore affirmed.—*Madeo v. I. Dibner & Bro., Inc. (Conn.), 186 A. 616.*

Society Proceedings

COMING MEETINGS

American Medical Association, Atlantic City, N. J., June 7-11. Dr. Olin West, 535 North Dearborn St., Chicago, Secretary.

American Academy of Pediatrics, New York, June 3-5. Dr. Clifford G. Grulee, 636 Church St., Evanston, Ill., Secretary.

American Academy of Tuberculosis Physicians, Atlantic City, N. J., June 7-8. Dr. Arnold Minnig, 638 Metropolitan Bldg., Denver, Secretary.

American Association for the Study and Control of Rheumatic Diseases, Atlantic City, N. J., June 7. Dr. Loring T. Swaim, 372 Marlborough St., Boston, Secretary.

American Association for the Study of Goiter, Detroit, June 14-16. Dr. W. Blair Mosser, 133 Biddle St., Kane, Pa., Secretary.

American Association for Thoracic Surgery, Saranac Lake, N. Y., May 31-June 2. Dr. Richard H. Meade Jr., 2116 Pine St., Philadelphia, Secretary.

American Association of Genito-Urinary Surgeons, Quebec, Canada, June 14-16. Dr. Henry L. Sanford, 1621 Euclid Ave., Cleveland, Secretary.

American Bronchoscopic Society, Atlantic City, N. J., June 2. Dr. Lyman Richards, 319 Longwood Ave., Boston, Secretary.

American Dermatological Association, Sky Top, Pa., June 3-5. Dr. Fred D. Weidman, 1930 Chestnut St., Philadelphia, Secretary.

American Gastro-Enterological Association, Atlantic City, N. J., June 7-8. Dr. Russell S. Boles, 1901 Walnut St., Philadelphia, Secretary.

American Gynecological Society, Swampscott, Mass., May 31-June 2. Dr. Richard W. TeLinde, 1201 N. Calvert St., Baltimore, Secretary.

American Laryngological Association, Atlantic City, N. J., May 31-June 2. Dr. James A. Babbitt, 1912 Spruce St., Philadelphia, Secretary.

American Laryngological, Rhinological and Otological Society, Atlantic City, N. J., June 3-5. Dr. C. Stewart Nash, 708 Medical Arts Bldg., Rochester, N. Y., Secretary.

American Neurological Association, Atlantic City, N. J., June 3-5. Dr. Henry A. Riley, 117 East 72d St., New York, Secretary.

American Ophthalmological Society, Hot Springs, Va., June 3-5. Dr. J. Milton Griscom, 255 South 17th St., Philadelphia, Secretary.

American Orthopedic Association, Lincoln-Omaha, Neb., June 2-4. Dr. Ralph K. Ghormley, 110 Second Ave. S.W., Rochester, Minn., Secretary.

American Otological Society, New York, May 27-28. Dr. Thomas J. Harris, 104 East 40th St., New York, Secretary.

American Physiotherapy Association, St. Paul, June 27-July 1. Miss Jefferson I. Brown, Tichenor Hospital School, Long Beach, Calif., Secretary.

American Proctologic Society, Atlantic City, N. J., June 6-8. Dr. Curtice Rosser, 710 Medical Arts Bldg., Dallas, Texas, Secretary.

American Radium Society, Atlantic City, N. J., June 7-8. Dr. William P. Healy, 121 East 60th St., New York, Secretary.

American Society of Clinical Pathologists, Philadelphia, June 2-6. Dr. A. S. Giordano, 531 North Main St., South Bend, Ind., Secretary.

American Surgical Association, New York, June 3-5. Dr. Charles G. Mixter, 319 Longwood Ave., Boston, Secretary.

American Therapeutic Society, Atlantic City, N. J., June 4-5. Dr. Oscar B. Hunter, 1835 Eye St. N.W., Washington, D. C., Secretary.

American Urological Association, Minneapolis, June 29-July 1. Dr. Clyde L. Deming, 789 Howard Avenue, New Haven, Conn., Secretary.

Associated Anesthetists of the United States and Canada, Atlantic City, N. J., June 7-8, Dr. F. H. McMechan, 318 Hotel Westlake, Rocky River, Ohio, Secretary-General.

Association for the Study of Internal Secretions, Atlantic City, N. J., June 7-8, Dr. E. Kost Shelton, 921 Westwood Blvd., Los Angeles, Secretary.

Connecticut State Medical Society, Bridgeport, May 19-20. Dr. Creighton Barker, 258 Church St., New Haven, Secretary.

Illinois State Medical Society, Peoria, May 18-20. Dr. Harold M. Camp, 202 Lahl Bldg., Monmouth, Secretary.

Maine Medical Association, Belgrade Lake, June 20-23. Miss Rebekah Gardner, 22 Arsenal St., Portland, Secretary.

Massachusetts Medical Society, Boston, June 1-3. Dr. Alexander S. Begg, 8 The Fenway, Boston, Secretary.

Medical Library Association, Richmond, Va., May 23-26. Miss Janet Doe, 2 East 103d St., New York, Secretary.

Medical Women's National Association, Atlantic City, N. J., June 6-8. Dr. F. S. Fetterman, 7047 Germantown Ave., Philadelphia, Secretary.

National Tuberculosis Association, Milwaukee, May 31-June 3. Dr. Charles J. Hatfield, 7th and Lombard Sts., Philadelphia, Secretary.

New Hampshire Medical Society, Manchester, May 18-19. Dr. Carleton R. Metcalf, 5 South State St., Concord, Secretary.

New York, Medical Society of the State of, Rochester, May 24-26. Dr. Peter Irving, 2 East 103d St., New York, Secretary.

North Dakota State Medical Association, Grand Forks, May 16-18. Dr. Albert W. Skelsey, 20½ North Broadway, Fargo, Secretary.

Pacific Northwest Medical Association, Great Falls, Mont., July 8-10. Dr. C. W. Countryman, 407 Riverside Ave., Spokane, Wash., Secretary.

Rhode Island Medical Society, Providence, June 2-3. Dr. Guy W. Wells, 124 Waterman St., Providence, Secretary.

South Dakota State Medical Association, Rapid City, May 24-26. Dr. John F. D. Cook, Langford, Secretary.

Vancouver Medical Association Summer School, Vancouver, B. C., June 22-25. Dr. J. R. Naden, 203 Medical-Dental Bldg., Vancouver, Secretary.

West Virginia State Medical Association, Clarksburg, May 24-26. Mr. Joe W. Savage, Public Library Bldg., Charleston, Executive Secretary.

Current Medical Literature

AMERICAN

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American Journal of Cancer, New York

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*Multiple Glomic Tumors. H. Bergstrand, Stockholm, Sweden.—p. 470.

Colorimetric and Spectrophotometric Determination of Vitamin C in Malignant Tumors. C. Voegtlin, H. Kahler and J. M. Johnson.—p. 477.

Chemical Studies on Tumor Tissue: IV. Staining with Neutral Red of Fresh Preparations of Mouse Tumor Cells. M. Belkin and M. J. Shear, Boston.—p. 483.

Id.: V. Staining with Vital Dyes of Mouse Tumor Cells Swollen in Salt Solutions. M. J. Shear and M. Belkin, Boston.—p. 499.

Metabolism of Pure Cultures of Malignant Cells of Walker Rat Sarcoma 319. J. Victor and W. H. Lewis, Baltimore.—p. 503.

Myeloid Hyperplasia Brought About in Mice by Growth of Dibenzanthracene Tumors and Its Relation to Transplantability of Tumors into Mice of Alien Strains. Margaret Reed Lewis, Washington, D. C.—p. 510.

Serologic Observations on Spontaneous Regression of Implants of Jensen's Rat Sarcoma. T. Lumsden and H. J. Phelps, London, England.—p. 517.

Structure of Thyroid in Mice of Different Strains. G. Barry and E. L. Kennaway, London, England.—p. 522.

*Studies in Genetics of Human Neoplasms: Cancer of Breast, Based on 201 Family Histories. R. P. Martynova, Moscow, U. S. S. R.—p. 530.

Chordoma: Case with Unusual Endocrine Findings. V. D. Barnes and S. E. Owen, Hines, Ill.—p. 541.

Osteogenic Sarcoma of Femur in a Guinea-Pig. S. A. Leader, Chicago.—p. 546.

Ossifying Fibroma of Maxillary Sinus: Report of Case Successfully Treated with Irradiation. I. Arons, New York.—p. 551.

Relative Biologic Effectiveness of Fast Neutrons and X-Rays on Different Organisms. R. E. Zirkle, Philadelphia; P. C. Aebersold and E. R. Dempster, Berkeley, Calif.—p. 556.

Multiple Glomic Tumors.—Bergstrand describes two cases of multiple glomic tumors localized in the posterior lateral part of the foot, in the malleolar region. In one case six tumors were observed. One of these lay deeply within the adipose tissue in the sinus tarsi. In the second case there was a subcutaneous tumor and tumors in the calcaneus, talus, os cuboideum and the fifth os metatarsale, a localization heretofore unknown. In one of the two cases of multiple glomic tumors previously described in the literature, the tumors were also localized in the heel.

Studies in Genetics of Human Neoplasms.—In 1932 Martynova began a systematic study on the genetics of human tumors. Cancer of the breast was studied first because of its comparative ease of diagnosis. In all, 201 female patients were examined and their pedigrees obtained. The material was definitely not a collection of familial cases. Altogether the 201 pedigrees included 7,173 persons. In the study of the genetics of cancer of the breast two problems present themselves: general predisposition of the organism to cancer and local predisposition to cancer of the breast. In an attempt to obtain a solution of these problems, the frequency of cancer was compared with the incidence in the general population. The percentage of cancer among relatives of the series under discussion was much higher than in the control population of the same age, or among relatives of leukemia patients. This high familial incidence of cancer for all categories of relatives speaks against its chance occurrence and indicates that hereditary factors play a definite part in the etiology of the disease. A comparatively high percentage of uncles and aunts were affected, as compared to parents. This is best explained by the fact that the patient is generally better informed concerning those of his relatives having the disease than those that are healthy. Cancer of the breast is more frequent in all categories of female relatives of the patients than in the control population. The disease was eighteen times as frequent in mothers of patients as in mothers of similar age in the control group. These facts indicate an inherited predisposition to cancer of the breast. This conclusion is further substantiated by the fact that cancer of the breast in women is generally fourth or fifth in frequency, following cancer of the stomach, uterus, esophagus and liver (including gallbladder). The author's data indicate that there is a hereditary predisposition to cancer of the breast as well as to cancer in general. It seems that there is complete absence of inbreeding among the relatives of the patients. The percentage of cases of cancer of the breast is much higher in mothers than in sisters of patients. Age may be an important factor here, but it is doubtful whether this alone can account for the difference. As regards general predisposition to cancer, there were six instances in which both parents had cancer—in two cases cancer of the same organ—and all the offspring resulting from these marriages were unaffected, though seven of these were more than 40 years of age, making it very unlikely that general predisposition to cancer is determined by a recessive gene substitution. It is possible that some of these offspring may yet develop the disease, although it is hardly likely that all will do so. It is more probable, therefore, that one has to do with a dominant form of inheritance. The degree of expression of the genetic factors involved cannot yet be evaluated, and it does not follow that these observations for cancer of the breast are necessarily true for other forms of cancer. Among the relatives of the patients in the series, fifty-one had tumors other than cancer, there were twenty-three instances of benign growths of known diagnosis, and twenty-eight cases were indicative of a benign neoplasm.

American Journal of Physiology, Baltimore

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Alterations of Alveolar Carbon Dioxide in Man Accompanying Postural Change. R. J. Main, Chicago.—p. 435.

Alteration of Actions of Various Respiratory Modifiers by Local Cooling of Floor of Fourth Ventricle. H. C. Nicholson and D. Brezin, Ann Arbor, Mich.—p. 441.

Rate of Lactic Acid Removal in Exercise. E. V. Newman, D. B. Dill, H. T. Edwards and F. A. Webster, Boston.—p. 457.

Vitamin A Deficiency in Dog. P. D. Crimm and D. M. Short, Evansville, Ind.—p. 477.

Extrapyramidal Control of Micturition: Effects of Lesions of Tegmentum of the Midbrain. P. M. Levin and O. R. Langworthy, Baltimore.—p. 483.

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Influence of Nutritionally Produced Anemia on Ability of Experimental Animals to Withstand Low Temperatures. I. A. Manville and E. B. Chase, Portland, Ore.—p. 549.

*Studies of Urine at Hourly Intervals After Administration of Glycine. Mildred Adams, Marschelle H. Power and W. M. Boothby, Rochester, Minn.—p. 562.

Effect of Anterior Hypophyseal Extract on Serum Calcium and Phosphorus. H. B. Friedgood and R. McLean, Boston.—p. 588.

Comparison of Sodium, Chloride and Carbohydrate Changes in Adrenal Insufficiency and Other Experimental Conditions. S. W. Britton and H. Silvette, with technical assistance of R. F. Kline, Charlottesville, Va.—p. 594.

Cortico-Adrenal Insufficiency: Metabolism Studies on Potassium, Sodium and Chloride. H. W. Nilson, Rochester, Minn.—p. 620.

Urine Studies After Administration of Aminoacetic Acid.—Adams and her colleagues determined the composition of urine collected at hourly intervals for from four to five hours after the ingestion of aminoacetic acid (from 10 to 20 Gm.) for normal individuals and for patients who had myasthenia gravis, progressive muscular dystrophy or fatigability of indefinite origin. The response of the individuals in these groups was qualitatively similar. In addition to the increased elimination of urea, uric acid and amino acids to be expected, there usually occurs an increased excretion of creatine. This may be slight or nonexistent the first time aminoacetic acid is given. If a creatinuria already exists, however, or has been provoked by the daily administration of aminoacetic acid, the prevailing hourly rate of excretion of creatine will in general be increased markedly when aminoacetic

acid is taken, either for the first time or immediately following the regular daily dose. The experiments were conducted from fourteen to sixteen hours after the last meal; consequently the results may be taken to represent the effects of aminoacetic acid more simply and more directly than the results of studies of twenty-four hour specimens of urine obtained from subjects who are receiving their usual diet. The hourly excretion of the sulfur partition products and the inorganic constituents was not influenced consistently by the administration of aminoacetic acid.

Anatomical Record, Philadelphia

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Simultaneous Occurrence of Number of Variations of Visceral Branches of Abdominal Aorta: Case. L. I. Kostinovitch, Odessa, U. S. S. R. —p. 399.

Method for Visualizing Different Organs in the Normal Unanesthetized Animal. F. R. Steggerda and C. Gianturco, Urbana, Ill.—p. 405.

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Technic for Studying Innervation of Organs. L. R. Wharton, Baltimore. —p. 469.

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Fate of Mouse Ova Tube Locked by Injections of Estrogenic Substances. H. O. Burdick, R. Whitney and G. Pincus, Boston.—p. 513.

Studies of Heart Muscle in Tissue Cultures. M. J. Hogue, Philadelphia. —p. 521.

Annals of Internal Medicine, Lancaster, Pa.

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Circulatory Studies on Anoxemia in Man with Respect to Posture and Carbon Dioxide. E. Gellhorn, Chicago.—p. 1267.

*Death Complicating Withdrawal of Narcotics, with Respiratory Difficulties Predominant: Report of Three Cases. P. Piker and J. Gelperin, Cincinnati.—p. 1279.

Fatal Iodine Poisoning: Clinicopathologic and Experimental Study. R. Finkelstein and M. Jacobi, Brooklyn.—p. 1283.

Galactose Tolerance Test in Jaundice; Consideration of Evidence Permitting Measurement of Galactose Utilization by Urinary Excretion; Some Sources for Error in Its Interpretation, and Addition in Routine Technic. H. Shay and P. Fieman, Philadelphia.—p. 1297.

*Night Blindness as Criterion of Vitamin A Deficiency: Review of Literature with Preliminary Observations of Degree and Prevalence of Vitamin A Deficiency Among Adults in Both Health and Disease. H. Jeghers, Boston.—p. 1304.

Crystalline Insulin. J. H. Barach, Pittsburgh.—p. 1335.

Lobar Pneumonia: Analysis of 1,298 Cases. J. F. Painton and H. J. Ulrich, Buffalo.—p. 1345.

Further Observations of Histidine Treatment of Peptic Ulcer. E. W. Willhelmy, Kansas City, Mo.—p. 1365.

Study of Hypertension in Veterans. J. A. Reisinger, Washington, D. C. —p. 1371.

Death Complicating Withdrawal of Narcotics.—During three years Piker and Gelperin have seen three deaths in narcotic addicts who had been suddenly deprived of the drugs to which they had become habituated. The principal clinical manifestations common to all three were coma, an unusual respiratory disturbance and death. The respiration was irregular and uniformly deep. Periods of apnea of varying lengths (up to one and one-half minutes) occurred at irregular intervals, to be followed immediately by deep, gasping inspirations during which all the accessory muscles of respiration were put to vigorous use. The expiratory phases were not particularly forceful. Generalized cyanosis was marked. These dyspneic periods fluctuated in duration in the same patient, lasting from five minutes to several hours. During the intervals between the attacks of dyspnea, which also varied in length, the cyanosis diminished. The administration of morphine sulfate subcutaneously had no appreciable effect. Though the respiration suggested the Cheyne-Stokes type of breathing in some respects, it was by no means typical. Gross and histologic study of the medulla on postmortem examination in one of these cases revealed no enlightening pathologic condition. It is known that the depressing effect of a poisonous dose of morphine on the respiratory center of the frog will eventually result in a type of respiration which is somewhat like that seen in the authors' patients. This fact, however, does not explain why abrupt withdrawal of the poisonous substance should produce a similar result. The unusual respiratory behavior was common to all three patients despite the existence in each case of factors which made it distinct from the others. The type of opium derivative to which each was habituated, the time between the patient's last dose of drug and the onset of coma and respiratory difficulty, the non-narcotic medication given before and after the onset of the coma—these and other factors varied markedly in the three cases. The circulatory failure did not occur in two of the patients (save as a terminal phenomenon).

Night Blindness as Criterion of Vitamin A Deficiency.—Jeghers discusses the prevalence of vitamin A deficiency in a group of supposedly normal adults, gives some preliminary results obtained by testing persons afflicted with various types of diseases, and reviews the literature dealing with the physiology, biochemistry, pathology and clinical aspects of vitamin A deficiency. Night blindness (hemeralopia), in the absence of intra-ocular disease, is the earliest and most constant manifestation of vitamin A deficiency in adults. In adults, night blindness may exist for years as its only manifestation. Night blindness is associated with certain objective data which can be measured by means of special procedures. These serve as a quantitative estimate of the degrees of vitamin A deficiency and are particularly valuable in that they can detect deficiency long before it becomes clinically manifest. The results of studying 274 adults by means of a Birch-Hirschfeld visual photometer and data collected from the literature show that mild to moderate degrees of vitamin A deficiency are common among many supposedly healthy adults. Financial reasons, peculiarities in choice of foods, ignorance of a proper diet and a desire to reduce weight were among the factors leading to deficiency. Vitamin A deficiency may occur even if the amount ingested daily is theoretically adequate if any condition is present which (1) increases the metabolic need for vitamin A, (2) interferes with the proper absorption from the gastrointestinal tract or (3) interferes with the conversion of carotene or storage of vitamin A in the liver. Vitamin A deficiency is probably a constant feature of liver disease and does not respond to the usual oral doses of vitamin A.

Archives of Dermatology and Syphilology, Chicago

35: 377-562 (March) 1937

Continuous and Intermittent Treatment for Early Syphilis: Critical Review of the American and the League of Nations' Investigation, with Additional Evaluations. J. H. Stokes, Philadelphia, and Lida J. Usilton, Washington, D. C.—p. 377.

Cooperative Clinical Studies in Treatment of Syphilis: Asymptomatic Neurosyphilis. P. A. O'Leary, Rochester, Minn.; H. N. Cole, Cleveland; J. E. Moore, Baltimore; J. H. Stokes, Philadelphia; U. J. Wile, Ann Arbor, Mich.; T. Parran, R. A. Vonderlehr and Lida J. Usilton, Washington, D. C.—p. 387.

Mapharsen in Treatment of Syphilis: Further Experiences. L. M. Wieder, O. H. Foerster and H. R. Foerster, Milwaukee.—p. 402.

*Multiple Glomus Tumors of Order of Telangiectases. F. D. Weidman, Philadelphia, and F. Wise, New York.—p. 414.

*Unsaturated Fatty Acids in Eczema: Observations on Acne Vulgaris, Psoriasis, Xanthoma Tuberosum and Xanthoma Palpebrarum. N. N. Epstein and D. Glick, San Francisco.—p. 427.

Some Results of Patch Tests: Compilation and Discussion of Cutaneous Reactions to About 500 Different Substances, as Elicited by Over 10,000 Tests in Approximately 1,000 Patients. A. Rostenberg Jr. and M. B. Sulzberger, New York.—p. 433.

Oriental Sore: Report of Case. E. J. Trow, Toronto.—p. 455.

Ringworm of Scalp: III. Clinical and Experimental Studies in Types of Infection Resistant to Treatment. G. M. Lewis and Mary E. Hopper, New York.—p. 460.

Vitamin C and Pigment. T. Cornbleet, Chicago.—p. 471.

Darier's Disease with Malignant Transformation. H. Charache, Brooklyn.—p. 480.

Multiple Glomus Tumors of Order of Telangiectases.—Weidman and Wise's patient exhibited forty-eight lesions of the glomus tumor type. Some of them occurred on sites other than the extremities; i. e., on the cheeks, shoulders and buttocks. There were certain features in the case which might arouse criticism against the diagnosis of glomus tumor, particularly the painlessness and the absence of demonstrable

nerve tissue on histologic examination. The authors believe that in their case telangiectases of glomi (lacking in nervous tissue) could account for the lesions, and they feel that perhaps the same explanation applies to cases reported by other investigators. It is suggested that some so-called glomus "tumors" are of the order of telangiectases, although others must be regarded as hamartomas or even as neoplasms. Clinically, however, the lesions bore not the slightest resemblance to cutaneous telangiectases of any variety.

Unsaturated Fatty Acids in Eczema.—Epstein and Glick further examined the iodine numbers of the blood lipids both in infants and in adults with eczema and compared the change in the iodine number with the condition of the skin in patients receiving oral treatment with oil. Studies of the iodine numbers in cases of cutaneous diseases other than eczema, i. e., psoriasis, acne vulgaris, xanthelasma and xanthoma, are also included. For the most part the disorders of these patients were of a particularly resistant type which had failed to clear after various forms of treatment. In four cases of infantile eczema the iodine numbers of the blood were determined. One of the babies, aged 3 months, received 2 teaspoonfuls of linseed oil by mouth three times daily for three months without any effect on the progress of the condition. One baby, aged 15 months, the iodine number of whose blood was not determined, received 2 teaspoonfuls of linseed oil three times daily for five months without improvement attributable to the therapy. There were seven children and one young adult whose eczema had begun in infancy and who had had recurring attacks since. The patients' ages varied from 11 to 18 years. The adult was 26 years old. Two patients in this group had received no linseed oil, while the others had taken half an ounce (15 cc.) of linseed oil three times a day for one month or longer. Two patients exhibited a flare up on one occasion during the period of treatment with oil. Only one patient with a disorder of a mild type definitely improved, but it was impossible to attribute this improvement to the oil therapy. Of the twenty-three adults who presented the various clinical types of generalized eczema, neurotic eczema, infectious eczematoid dermatitis and seborrheic eczema, eleven took 2 ounces (60 cc.) of linseed oil daily for from one to five months, but in no instance was there a definite beneficial effect on the eczema. In a group consisting of twelve patients with psoriasis, six with acne vulgaris, three with xanthoma tuberosum and one with xanthoma palpebrarum, no definite correlation could be observed between the iodine number of the blood, which varied considerably, and the clinical manifestations of the disease.

Archives of Otolaryngology, Chicago

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Surgical Repair of Facial Nerve. S. Bunnell, San Francisco.—p. 235.
Diphtheria Simulating Peritonsillar Abscess: Dangers of Incision. A. H. Neffson, New York, and J. Brem, Boston.—p. 260.
Otitic Streptococcic Meningitis with Recovery: Report of Case. S. P. Schechter, New York.—p. 266.
*Osteomyelitis of Skull of Otitic and Paranasal Sinus Origin. H. C. Behrens, Whittier, Calif.—p. 272.
Use of Galvanic Current in Treatment of Atrophic Rhinitis and Ozena: Further Observations. J. S. Stovin, New York.—p. 305.
Peroral Endoscopy. L. H. Clerf, assisted by D. C. Baker Jr., Philadelphia.—p. 314.

Osteomyelitis of Otitic and Paranasal Sinus Origin.—Behrens reemphasizes the importance of osteomyelitis of the skull, discusses its various aspects, stresses its insidious onset and the disproportion between the external symptoms and its real gravity, asks for earlier recognition and adequate treatment of the rapidly progressive type and gives summaries of his seven cases. In the majority of cases, osteomyelitis of the skull follows surgical intervention and is also more serious from a prognostic standpoint than that which arises spontaneously. One should never operate on the sinuses unless the indications are clear cut, but when necessary one should operate promptly and expose the area adequately for good drainage. Nutrition of the bone will be impaired if pus or necrotic material is confined. The use of any instrument that rubs infected material into rough edges of bone, such as the rasp or the curet, should be avoided. The condition should be classified into the localized, or self-limited, type or the progressive type as soon as possible, so that appropriate treatment may be instituted early. When radical treatment is necessary, one should use it promptly and thoroughly, in stages if necessary. Transfusions should be given preoperatively, postoperatively and intercurrently; the immunotransfusion is especially recommended. Supportive treatment should not be forgotten, regardless of the active treatment. Regeneration of bone in cranial defects is usually good, though it may take several years.

Arch. of Physical Therapy, X-Ray, Radium, Chicago

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Treatment of Keloids. W. J. Hoffman, New York.—p. 135.
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Modern Hydrotherapy. H. J. Behrend, New York.—p. 146.
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Method of Examining Short Wave Field. C. K. Gale and A. Edelman, New York.—p. 165.
Fundamental Knowledge of Light. T. H. Peterson, Boston.—p. 170.

Canadian Public Health Journal, Toronto

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The Problem of the Subnormal in the Community. B. T. McGhie, Toronto.—p. 105.
Vital Statistics at the Service of Public Health and the Medical Profession. E. Gagnon, Montreal.—p. 112.
*Typhoid Carriers Among 7,000 Food Handlers. J. R. Scott, Albuquerque, N. M.—p. 120.
Supervision in Public Health Nursing. Alice Ahern, Ottawa, Ont.—p. 125.
Investigation of Source of Arsenic in Well Water. J. Wyllie, Kingston, Ont.—p. 128.
Adrenal Glands: Review of Laboratory and Clinical Studies. R. A. Cleghorn, Toronto.—p. 136.

Typhoid Carriers Among Food Handlers.—Scott discusses the collection of specimens of the intestinal discharges for laboratory examination of some 7,040 persons engaged in handling food in its various forms. Of 2,138 dairy employees who submitted specimens for laboratory examinations 2,070 specimens were found to be negative for Bacillus typhosus, while 105 were received in a condition unsatisfactory for bacteriologic examination. Seven persons applying for employment in dairies were found to be excreting typhoid bacilli in the intestinal discharges. When expressed as a percentage, the number of positive typhoid carriers detected in this group amounts to the apparently insignificant figure of 0.32 per cent. However, when it is considered that milk is an exceptionally fine medium for the growth of typhoid organisms, the danger to the milk-consuming population, had these seven carriers been permitted employment in dairies, is vast. Many epidemics have been reported that have been traced to the employment of a single typhoid carrier in a dairy. While the number of typhoid carriers among dairy workers appears small, the detection and exclusion of these carriers from milk handling has been a valuable means of safeguarding the health of the citizens of the county. The menace of the typhoid carrier in cafés, restaurants, hotel dining rooms and other types of eating places is usually considered to be somewhat less than that presented by the carrier working in a dairy. There were 2,327 food handlers who submitted specimens of the intestinal discharges for laboratory study. Of these, 2,188 proved negative on examination, 132 were found to be unsatisfactory for examination and seven were found positive for Bacillus typhosus. Some 440 fecal specimens from soda fountain employees were obtained, of which number 424 were negative for Bacillus typhosus, while in sixteen cases the specimens were unsatisfactory for laboratory study. These soda fountain employees constituted the only group of the food and beverage handlers that failed to yield positive typhoid specimens. Had the series of specimens been larger, some typhoid carriers would undoubtedly have been detected among this class of workers. The cooperation of 732 employees of bakeries was enlisted for the study, of which 675 submitted specimens which were negative for Bacillus typhosus, while in fifty-three cases the specimens were unsuitable for laboratory study. Four persons were detected who had typhoid bacilli in the intestinal discharges. Of 629 specimens from employees of grocery stores and meat markets 578 were negative for Bacillus typhosus, while fifty specimens were unsuited to laboratory investigation. One typhoid carrier was detected. In a miscellaneous group

of food handlers 705 of 749 intestinal specimens did not show Bacillus typhosus, while in forty-three cases the specimens were unsatisfactory for laboratory examination and study. One typhoid carrier was detected in this group of miscellaneous food handlers. When the figures for the series are reduced to percentages, it is found that 94.9 per cent of the specimens were negative for Bacillus typhosus, that 4.8 per cent were unsatisfactory for laboratory examination and that 0.3 per cent were positive for Bacillus typhosus.

Endocrinology, Los Angeles

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Studies on Adaptation. H. Selye, Montreal.—p. 169.
Statistical Survey of Endocrinopathies Among Young Delinquents. N. M. Taylor and R. L. Schaefer, Detroit.—p. 189.
*Observations on "Prediabetes." H. R. Rony, Chicago.—p. 195.
Effect of Cortin on Sodium Potassium, Chloride, Inorganic Phosphorus and Total Nitrogen Balance in Normal Subjects and in Patients with Addison's Disease. G. W. Thorn, Helen R. Garbutt, F. A. Hitchcock and F. A. Hartman, Columbus, Ohio.—p. 202.
Effect of Cortin on Renal Excretion of Sodium, Potassium, Chloride, Inorganic Phosphorus and Total Nitrogen in Normal Subjects and in Patients with Addison's Disease. G. W. Thorn, Helen R. Garbutt, F. A. Hitchcock and F. A. Hartman, Columbus, Ohio.—p. 213.
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Evaluation of Hormone Therapy for Undescended Testes in Man. A. J. Cramer Jr., Buffalo.—p. 230.
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Interrelationship of Pituitary Sex Hormones in Ovulation, Corpus Luteum Formation, and Corpus Luteum Secretion in Hypophysectomized Rabbit. M. A. Foster, Ruth Caldwell Foster and F. L. Hisaw, Madison, Wis.—p. 249.
Some Factors Influencing Vitalization of Ovarian Graft and Production of Sex Hormones in Male Rat. C. A. Pfeiffer, New York.—p. 260.
Production of Estrogenic Hormone by Transplantable Ovarian Carcinoma. L. C. Strong, W. U. Gardner and R. T. Hill, New Haven, Conn.—p. 268.
Effects of Thyroidectomy, Castration, Anterior Lobe Administration and Pregnancy on Experimental Diabetes Insipidus in Cat. W. R. Ingram and C. Fisher, Iowa City and Chicago.—p. 273.
Effect of Adrenalectomy and Thyroidectomy on Ketonuria and Liver Fat Content of Albino Rat Following Injections of Anterior Pituitary Extract. Edith G. Fry, Philadelphia.—p. 283.

Observations on Prediabetes.—Rony believes that the high incidence of obesity in diabetes indicates that some relationship exists between these two conditions. In consequence of this contention the presence of low sugar tolerance in obese persons has come to be regarded as a danger sign of diabetes (prediabetes). This prognostic evaluation is the more conspicuous as low sugar tolerance in other clinical conditions is, as a rule, not thought to be conducive to diabetes. He has had twenty obese patients with low sugar tolerance under observation for from one to nine years in order to find out when and under what conditions manifest signs and symptoms of diabetes would appear. None of them developed diabetes. As the patients received instructions to follow a low caloric diet, one might think that the undernutrition was instrumental in preventing the development of diabetes. However, at least six of the patients failed to restrict their food intake. It appears therefore that low sugar tolerance observed in obese persons is not, in itself, indicative of a danger of diabetes. In this respect low sugar tolerance in obesity does not seem to differ from the low sugar tolerance observed in other conditions. However, there is a notable difference between obese persons with low sugar tolerance and normal persons: the former invariably show a marked improvement of their sugar tolerance, while the latter are known to respond with a marked decrease of sugar tolerance. The author suggests that this peculiar difference may be due to the rôle of the fat tissue in blood sugar regulation. During the first three hours following a dextrose test meal, dextrose accumulation in tissues other than the liver constitutes the major mechanism of blood sugar regulation. There is uncontested evidence that among other tissues the fat tissue may prominently participate in the mechanism of blood sugar removal after dextrose ingestion. Previous undernutrition tends to make the fat tissues capable of absorbing large amounts of sugar from hyperglycemic blood. The basic effect of undernutrition on carbohydrate metabolism —be it to decrease insulin sensitiveness or something else— may be the same in normal as in obese persons. In individuals with small amounts of fat tissue, this effect appears in the form of decreased dextrose tolerance. In persons with large amounts of excess fat tissue the same effect is compensated by accumulation of carbohydrate in the fat tissue, with the result that the blood sugar time curve becomes flatter, giving the picture of improved dextrose tolerance.

Illinois Medical Journal, Chicago

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Skin Manifestations of Drug Intoxications: Dermatitis Medicamentosa. W. J. Morginson, Springfield.—p. 226.
Scopolamine and Atropine Cycloplegia: Comparative Study. L. Bothman, Chicago.—p. 229.
Review of Angina Pectoris and Coronary Disease. R. S. Berghoff, Chicago.—p. 234.
The Ophthalmoscopic Signs of Failing Health. A. J. Bedell, Albany, N. Y.—p. 238.
Clinical Experience in Treatment of Arthritis with Massive Doses of Vitamin D. I. E. Steck, Chicago.—p. 243.
Prostatitis and Vesiculitis: Treatment with Local Heat. W. H. Kenner, Chicago.—p. 248.
Repercussion Therapy. E. G. C. Williams, Danville.—p. 257.
Sepsis of Cryptogenic Origin. F. Stenn and W. Zeiter, Chicago.—p. 261.
Dividends of Depression. A. R. E. Wyant, Chicago.—p. 262.
Physical Pain and Mental Suffering in Workmen's Compensation Cases. K. Garve, Los Angeles.—p. 264.
Present Status of Immunization Against Contagious Diseases. L. Frech, Decatur.—p. 267.

Journal of Pediatrics, St. Louis

10: 295-436 (March) 1937

Antirachitic Potency of Ergosterol Activated by Low Velocity Electrons: Clinical Evaluation. I. McQuarrie, W. H. Thompson, A. V. Stoesser and L. G. Rigler, Minneapolis.—p. 295.
Epilepsy in Childhood: I. Statistical Study of Clinical Types. L. Wilkins, Baltimore.—p. 317.
Id.: II. Incidence of Remissions. L. Wilkins, Baltimore.—p. 329.
Id.: III. Results with Ketogenic Diet. L. Wilkins, Baltimore.—p. 341.
*Rat-Bite Fever with Demonstration of Spirillum Minus: Case. O. Bloch Jr. and H. Baldock, Louisville, Ky.—p. 358.
*Late Results of Treated Childhood Hypothyroidism: Two Case Reports. Leona M. Bayer and A. W. Snoke, San Francisco.—p. 361.
Atresia of Pulmonary Orifice with Intact Interventricular Septum. M. M. Steiner, Brooklyn.—p. 370.
Progressive Facial Hemiatrophy: Report of Two Cases with Cerebral Calcification. Katharine K. Merritt, New York; H. K. Faber, San Francisco, and Hilde Bruch, New York.—p. 374.
New Double Telescoping Cannula for Continuous Intravenous Therapy. S. Karelitz, New York.—p. 396.

Rat-Bite Fever with Demonstration of Spirillum Minus.—Bloch and Baldock report their case of rat-bite fever, in a girl 3 years of age, because among more than eighty cases of the disease reported from twenty-three states only thirteen had the diagnoses proved by the demonstration of the causative spirillum and because no authentic case has yet been reported from Kentucky. In searching the darkfield preparations for spirilla, after intraperitoneal inoculation of white mice, it was observed that often for the first hour after the drop of blood was placed on the slide no spirilla could be found; then they would begin to appear, shooting to and fro in the spaces among the red cells. In addition to the spirilla, several other moving bodies were seen, which might possibly cause confusion in diagnosis, if misinterpreted: a motile bacterium appearing in the preparations after an hour or two, a very fine, wavy, scintillant filament attached to red cells and fluttering in currents in the plasma and a small, refractile, rapidly moving particle seen inside the red cells, especially if hemolysis has been produced by adding distilled water to the preparation. Both of the last two objects are seen in normal mouse blood. A fourth possibility of error is the occurrence

of spirilla in the blood of the mouse before inoculation. For this reason a negative examination, preceding the positives, is important as a control.

Late Results of Treated Childhood Hypothyroidism.—Bayer and Snoke give the original status and progress of two children with thyroid deficiency, onset approximately at 1 year and 2 months, respectively. They have been followed under treatment from approximately ages of 4 to 18 years and 2 to 11 years. Both children had at the beginning the appearance and build characteristic of thyroid deficiency and a significant retardation in height and in bony and mental development. There was complete restitution of osseous development in both children. The older girl has developed a nicely proportioned body with quite a delicate face, but she has remained permanently dwarfed and her intellect has not developed beyond the ten year six months level. The younger one, on the other hand, has retained her thickset build but has compensated completely in height and mentality.

Journal of Pharmacology & Exper. Therap., Baltimore

59: 241-358 (March) 1937

Study of Sodium Salt of 3-Amino-4-Beta-Hydroxyethoxyphenylarsonic Acid in Experimental Trypanosomiasis and Syphilis and in Clinical Syphilis and Neurosyphilis. A. L. Tatum, C. C. Pfeiffer, M. L. Kuhs, W. F. Lorenz and J. T. Green Jr., Madison, Wis.—p. 241.

Duration of Acquired Tolerance to Ethyl Alcohol. H. Newman and J. Card, Palo Alto, Calif.—p. 249.

Nystagmic Head Deviation, Selective Action of an Aliphatic Bromine Compound. S. Loewe, New York.—p. 253.

*Nicotine Toxicity: III. Effect of Nicotine-Containing Diets on Estrus Cycle. R. H. Wilson and F. De Eds, San Francisco.—p. 260.

Study of Choline Esterase. M. H. Roepke, Toronto.—p. 264.

Effect of Small Doses of Potassium Iodide on Thyroid Gland of the Guinea-Pig. E. S. Margolin, St. Louis.—p. 277.

Action of Potassium Chloride and of Calcium Chloride on Adrenals of Cat. G. Katz and Gertrud Katz, New Orleans.—p. 284.

Analgesia Produced by Nitrous Oxide, Ethylene and Cyclopropane in Normal Human Subject. M. H. Seevers, J. H. Bennett, H. W. Pohle and E. W. Reinardy, Madison, Wis.—p. 291.

Effect of Decholin Sodium on Intact Intestine of Nonanesthetized Dog. C. M. Gruber, Philadelphia.—p. 301.

Action of Strychnine and Ethyl Strychnine on Normal and Disturbed Respiratory Function. M. Aiazzi-Mancini and L. Donatelli, Florence, Italy.—p. 304.

Antisympathomimetic Action of Dioxane Compounds (F883 and F933), with Especial Reference to Vascular Responses to Dihydroxyphenyl Ethanolamine (Arterenol) and Nerve Stimulation. K. I. Melville, Montreal.—p. 317.

Sodium Bismuthate Soluble in Experimental Syphilis. P. J. Hanzlik, San Francisco.—p. 328.

Elastic Limits of Plasma Gels. L. F. Shackell, New Brunswick, N. J. —p. 333.

Action of Morphine on Contractions of Nonpregnant Uterus in Unanesthetized Dogs and Rabbits. D. Slaughter and E. G. Gross, Iowa City.—p. 350.

Effect of Nicotine-Containing Diets on Estrous Cycle.—Wilson and De Eds noticed that the feeding of diets containing 0.025 per cent of nicotine definitely altered the estrous cycle. The facts that the rats ate less than the normal amount of food and that an equally severe estrual disturbance was produced by decreasing the intake of an adequate diet support the idea that the results were due to a state of malnutrition rather than to a direct action of nicotine. This is in harmony with the existence of normal estrus in rats reported by others, in which the nicotine was injected periodically and presumably did not interfere with a normal food intake. The decreased food intake resulting from oral ingestion of nicotine in the food is due possibly to gastro-intestinal disturbances, one of which is probably an impaired appetite.

Laryngoscope, St. Louis

47: 77-146 (Feb.) 1937

Fundamental Pathology of Larynx. J. D. Kernan, New York.—p. 77.

Some Problems in Cosmetic Surgery of the Nose. A. Kovacs, Milwaukee. —p. 92.

Nasal Hemorrhage: Ligation of Anterior Ethmoid Artery: Case Report. H. M. Goodyear, Cincinnati.—p. 97.

Contribution to Treatment of Vasomotor Rhinitis. A. Lewy, Chicago.—p. 100.

Historical Aspects of Bone Conduction. N. H. Kelley, Iowa City.—p. 102.

Twenty Years' Experience with Iodine Powder (Sulzberger) in Conservative Treatment of Aural and Nasal Suppuration. M. D. Lederman, New York.—p. 110.

Foreign Body in External Auditory Canal Trapped by Exostosis. H. J. Hara, Los Angeles.—p. 126.

Medical Annals of District of Columbia, Washington

6: 53-86 (March) 1937

Ectopic Pregnancy: Some High Lights in Its History. G. J. Brilmyer, Washington.—p. 53.

Use of Pregl's Solution in Treatment of Ocular Infections. R. A. Cox, Washington.—p. 61.

*Infectious Diarrheas in Children. J. Rose and M. M. Schapiro, Washington.—p. 64.

Court of Appeals Decisions, with Excerpts of Evidence in Cases Brought By and Against Washington Physicians. F. A. Fenning, Washington. —p. 67.

Infectious Diarrheas in Children.—In 194 cases of true infectious diarrheas seen during a period of four years, Rose and Schapiro found that in the District of Columbia the greatest number of cases are due to Eberthella paradysenteriae Hiss, while workers in Maryland, West Virginia and New York find that from 25 to 80 per cent of their cases are due to Eberthella paradysenteriae Flexner. The reports found in the literature relating to the bacteriology of the stools from infants with diarrhea show great variation as to those in which the dysentery bacillus was found. The lack of uniformity seemed to depend on (1) the technic used in procuring material for culture, (2) the type of patient under observation, (3) seasonal variation in incidence of dysentery infection and (4) geographic and environmental locality. The fact that there is no characteristic lesion found in the gastro-intestinal tract of the majority of infants succumbing to this condition indicates that factors other than gastro-intestinal damage must be operative, at least in those cases in which such specific disease as dysentery can be excluded. The question of age distribution is of prime importance if one is to seek adequate measures to combat this scourge of infancy. The study of the age distribution and racial distribution of the infectious diarrheas at the Children's Hospital brings out the very important point of the higher incidence in Negro children, mainly because of their socio-economic status and accompanying ignorance. A close inspection readily reveals the prime factors which are the causative or rather catalytic factors in the development of dysentery. The majority of the white patients came from a similar socio-economic status: small hamlets and towns of nearby Virginia and Maryland. The problem apparently hinges largely on the socio-economic status of the patient's parents. The highest incidence occurred between the ages of 6 to 12 months. It is at this period in life that the baby is first weaned and comes in contact with food of a nature not prepared especially for him. It is during this time that most of the noninfectious diarrheas are apt to occur, since it takes some time for the gastro-intestinal tract of the infant to accustom itself to a new type of diet. It is a well known fact that rarely does dysentery develop in exclusively breast-fed infants.

Minnesota Medicine, St. Paul

20: 135-198 (March) 1937

Value of, and Indications for, Intraspinal Injections of Alcohol in Relief of Pain. A. W. Adson, Rochester, Minn.—p. 135.

Bone Marrow and Leukopenia. S. H. Boyer Jr., Duluth.—p. 140.

*Effect of Barometric Pressure on Incidence of Cerebral Hemorrhage: Preliminary Study. G. R. Kamman, St. Paul.—p. 148.

Traumatic Arthritis. J. Morrow, Austin.—p. 153.

Diagnostic Significance of Hemoptysis. H. C. Hinshaw, Rochester.—p. 156.

Nonspecific, Nonmalignant Lesions of Vagina and Uterine Cervix. M. C. Piper, Rochester.—p. 158.

X-Ray Diagnosis of Placenta Praevia in General Practice. R. E. Priest, Worthington.—p. 163.

Mandelic Acid Treatment of Urinary Tract Infection. L. R. Prins, St. Paul.—p. 167.

Clinical Aspects of More Common Fractures. H. B. Macey, Rochester. —p. 171.

Affective Reaction Types of Psychoses: Presentation of Case. J. Lohmann, Fergus Falls.—p. 174.

Schizophrenia. L. W. Katzberg, Fergus Falls.—p. 177.

Effect of Barometric Pressure on Incidence of Cerebral Hemorrhage.—To determine whether cerebral hemorrhage is influenced by atmospheric pressure, Kamman studied the necropsy of the last case of cerebral hemorrhage that was acceptable for study (Oct. 4, 1935) and worked back through the records until a series of 150 cases had been obtained (Sept. 19, 1927). The greatest percentage of deaths from cerebral hemorrhage occurred during the seventh decade in men and during the fifth in women. When the direction in which the

barometer was moving is considered, it is found that it was rising in eighty cases, falling in sixty-five and stationary in five. In other words, a change in barometric pressure occurred when 145 of the 150 patients died. In 55.2 per cent it was rising and in 44.8 per cent it was falling. Since a trace of a fall occurs twice as often as a trace of a rise, whereas a great rise occurs eight times as frequently as a great fall, it seems that, even if the data are not sufficient to study the relationship between the incidence of cerebral hemorrhage and barometric pressure by actual statistical methods of correlation, an approach to the problem may be made by studying the frequency distribution of the change in barometric pressure during the twenty-four hour period preceding the day on which the hemorrhage occurred. By computation of this frequency distribution it is observed that the average change in barometric pressure for the twenty-four hour periods preceding days on which cerebral hemorrhage occurred is $+0.074$ inch of mercury. Obviously since the general level of atmospheric pressure is not changing over long periods of time, the theoretical average change for all days in extended time would be zero. The series of 145 cases considered, therefore, indicates that cerebral hemorrhage is associated with periods of increasing barometric pressure. The standard deviation in the table, when calculated mathematically, is 0.2426, giving a standard error of the mean of ± 0.0202. Since 0.074 is more than three times greater than the standard error, it appears entirely reasonable to expect that the value would be proved statistically significant if the data on barometric change in extended time were available.

Missouri State Medical Assn. Journal, St. Louis

34: 73-108 (March) 1937

Differential Diagnosis of Mediastinal Lesions. J. J. Singer, St. Louis.—p. 73.
Coronary Occlusion. J. Jensen, St. Louis.—p. 77.
Maternal Welfare, with Especial Emphasis on Problems in Missouri. R. R. Wilson, Kansas City.—p. 78.
Tumors of Head and Neck. L. H. Jorstad, St. Louis.—p. 82.
Syphilis and Pregnancy. S. D. Soule, St. Louis.—p. 84.
Pernicious Anemia. H. P. Boughnou, Kansas City.—p. 88.
Milk. H. W. Soper, St. Louis.—p. 90.

New England Journal of Medicine, Boston

216: 411-448 (March 11) 1937

*Results of Total Thyroidectomy in Heart Disease. T. S. Claiborne and L. M. Hurxthal, Boston.—p. 411.
Age of Harvard Medical School in Relation to That of Other Existing Medical Schools in the United States. F. C. Waite, Cleveland.—p. 418.
Fractures of Mandible and Maxilla. J. A. Doherty, Boston.—p. 425.
Irreducible Dislocation of Ankle. R. L. Maynard, Burlington, Vt.—p. 428.

Results of Total Thyroidectomy in Heart Disease.—Because of the encouraging reports concerning patients in whom total thyroidectomy had been carried out for heart disease and after actual interviews with such patients, Claiborne and Hurxthal performed their first total thyroidectomy on a patient with heart disease in the Lahey Clinic in December 1933. Since that time twenty-seven patients have been operated on, the last operation having taken place one year ago. Their results have been fairly satisfactory in some cases. This appears to have been due in large part to the fact that many of the patients selected for operation were not extremely ill. In some cases they might have been symptom free while on a regimen of partial rest and inactivity. The average patient is a great deal more careful in following instructions with regard to rest and work after an operation than before. In following the patients with angina pectoris after a total thyroidectomy, it has been obvious that the amelioration of pain is a more or less temporary affair. The grading of the results has had to be changed on several occasions because of favorable effects at first and less satisfactory results later. This does not necessarily discredit a therapeutic procedure, because the progression of the disease must be considered in tabulating results over a period of years. The decrease in the number of total thyroidectomies performed at present is indicative of a swing back from an enthusiastic trial of a new procedure. Physicians caring for patients at home after the total thyroidectomy are noticing, at times, that these patients are in a condition similar to that present before the operation, and consequently they are not so anxious to have other patients undergo such a procedure. There are some patients in whom the operation of total thyroidectomy seems justifiable; however, they are few.

216: 449-492 (March 18) 1937

Recent Advances in Study of Typhus Fever. H. Zinsser, Boston.—p. 449.
Immunologic Application of Placental Extract. C. F. McKhann, Boston.—p. 450.
Epidemiology of Influenza. W. G. Smillie, Boston.—p. 451.
*Immune Reactions in Patients with Gonococcic Infections. C. S. Keefer and W. W. Spink, Boston.—p. 454.
Immunization in Yellow Fever and Other Virus Diseases. A. W. Sellards, Boston.—p. 455.
Antiserum Treatment of Pneumonia from the Standpoint of Public Health. E. S. Robinson, Jamaica Plain, Mass.—p. 459.
Some Aspects of Pneumococcic Infection in Man. M. Finland, Boston.—p. 460.
Studies on Filarioidea: Summary of Remarks. R. P. Strong, Boston.—p. 461.
Trichinosis: Incidence and Diagnostic Tests. D. L. Augustine, Boston.—p. 463.
Study of Pathogenic Rickettsiae in Tissue Culture. H. Pinkerton, Boston, and G. M. Hass, Cambridge, Mass.—p. 466.
Oxygen Therapy: Modification of Box Method for Giving 95 Per Cent Oxygen. A. M. Burgess, Providence, R. I.—p. 467.
Traumatic Intraperitoneal Rupture of Bladder: Report of Case. F. J. C. Smith, Quoddy, Maine.—p. 469.

216: 493-538 (March 25) 1937

The General Management and Treatment of Obliterative Peripheral Vascular Disease of Lower Extremities. T. C. Pratt, Boston.—p. 493.
Iodine Tolerance Test as an Aid in Diagnosis of Clinical Hyperthyroidism. H. J. Perkin and F. H. Lahey, Boston.—p. 501.

Immune Reactions in Patients with Gonococcic Infections.—Keefer and Spink declare that the gonococcus is killed in vitro by lysis. This is accomplished by a sensitization of the organisms by antibody, and their destruction is completed by complement. There is no evidence that phagocytosis of organisms is important in this process. Different strains vary in their invasive properties, and this is dependent on the presence of natural bacteriolysins and on the ability of the gonococci to survive in areas abundantly supplied with mucus. During and following a gonococcic infection, the bacteriolysin titer of the blood increases. This is seen more often when there are metastatic lesions, such as arthritis. A study of the bactericidal content of synovial fluid indicates that it may be the same as the blood when the fluid is sterile and that it may be lower when the fluid is infected. The presence of mucin may reduce but does not abolish the action of antibody. This is not caused by an alteration of the complement titer of the plasma or synovial fluid. There is some evidence that it interferes with the sensitization of organisms. The addition of antigonococcus serum to blood in vitro and in vivo increases the bacteriolytic titer of the serum. This is of some practical importance in gonococcic bacteremia without endocarditis.

New Jersey Medical Society Journal, Trenton

34: 149-220 (March) 1937

Serologic Differences in Human Blood, and Their Practical Application. P. Levine, Newark.—p. 155.
Histamine: Its Practical Application and Theory of Its Action. M. Openchowski, Newark.—p. 163.
Cerebral Injuries. J. W. Hurff, Newark.—p. 167.
Orthoptic, Operative and Combined Methods of Treating Convergent Squint. L. Emerson, Orange.—p. 173.
Visual Requirements for Automobile Drivers. E. S. Sherman, Newark.—p. 177.
Hearing of Automobile Drivers. D. MacFarlan, Philadelphia.—p. 182.

New Orleans Medical and Surgical Journal

89: 465-530 (March) 1937

Diagnosis of Malignancies of Lung from the Pathologist's Standpoint. J. A. Lanford, New Orleans.—p. 465.
Cancer of Cervix. H. G. F. Edwards, Shreveport.—p. 468.
Preoperative Radiation of Cancer of the Breast. L. J. Menville and J. N. Ane, New Orleans.—p. 474.
Postoperative Pulmonary Complications. J. R. Veal and B. D. van Werden, New Orleans.—p. 477.
Treatment of Chronic Varicose Ulcers of Lower Extremities. N. Owens, New Orleans.—p. 483.
Significance of Cardiac Arrhythmias as Encountered in General Practice. W. R. Wirth, New Orleans.—p. 491.
The Physiology of Hypertension. H. Laurens, New Orleans.—p. 500.
The Problem of Vascular Disease. J. E. Knighton Jr., Shreveport, La.—p. 506.

New York State Journal of Medicine, New York

37: 461-542 (March 1) 1937

Pathology and Treatment of Spinal Injuries. J. E. Scarff, New York.—p. 461.
Silicosis in Modern Foundries: Study of Incidence. J. F. Kelley and R. C. Hall, Utica.—p. 478.
Thoracoscopy and Intrapleural Pneumolysis: Report of Fifty Cases. H. B. Powers, Lake Kushaqua.—p. 482.
Management of Labor Complicated by Rectal Stricture: Report of Eighteen Cases. F. A. Kassebohm and M. J. Schreiber, New York.—p. 484.
Lymphogranuloma Venereum: Report of Case. B. A. Kornblith, New York.—p. 488.
*Meningococcemia Without Meningitis: Report of Case. F. W. Goundry, Binghamton, and T. H. Phalen, Johnson City.—p. 491.

Meningococcemia Without Meningitis.—Goundry and Phalen cite a case of meningococcemia unaccompanied by meningitis, which began with chills and fever and was accompanied by headache, joint pain and mental apathy. This was followed by profuse sweating and a generalized rash resembling typhoid roseola. The blood count showed a moderate leukocytosis with a preponderance of polymorphonuclears. Meningococci were found in the blood stream early in the attack. As the patient improved, the blood cultures became negative. There appeared to be no indication for cultures from the petechia and spinal fluid. This condition is probably more common than one realizes because facilities for blood cultures are not always at hand, and enriched culture mediums must be used for the isolation of the meningococcus. The physician is often unmindful of this disease and may easily overlook it, especially in the milder cases. The triad of chills, arthralgia and skin eruption should prompt one to secure an early blood culture. From the therapeutic point of view, specific serum therapy seems the treatment of choice.

Ohio State Medical Journal, Columbus

33: 241-356 (March) 1937

Treatment of Rheumatoid Arthritis. R. L. Haden, Cleveland.—p. 257.
Carcinoma of the Breast. I. B. Harris, Columbus.—p. 262.
Diagnosis and Treatment of Concretio Cordis: Accretio Cordis. J. McGuire and V. Hauenstein, Cincinnati.—p. 268.
Transfusion Apparatus with Minimal Trauma to Cells. M. Shaweker, Dover.—p. 272.
Takata-Ara Test for Liver Function. F. C. Payne, Dayton.—p. 275.
Tuberous Sclerosis: Report of Five Cases Including One Case in One of Twins. A. T. Hopwood, Orient.—p. 277.
Practical Aspects in Diagnostic Use of Tuberculin. W. E. Nelson, Cincinnati.—p. 283.
Diagnostic Methods in Industrial Medicine. P. A. Davis, Akron.—p. 286.

Oklahoma State Medical Assn. Journal, McAlester

30: 77-110 (March) 1937

Prostatic Resection in the Poor Risk Patient. H. M. Spence, Dallas, Texas.—p. 77.
Collapse Therapy in Pulmonary Tuberculosis. F. Moorman, Oklahoma City.—p. 82.
Use of X-Ray in Diagnosis of Breast Lesions. I. H. Lockwood, Kansas City, Mo.—p. 84.
Prenatal Care. Emma Jean Cantrell, Wilson.—p. 87.
Crossed Eyes. J. R. Reed, Oklahoma City.—p. 89.
Eye Malingerers. J. W. Shelton, Oklahoma City.—p. 93.

Pennsylvania Medical Journal, Harrisburg

40: 409-490 (March) 1937

The Case Against Transurethral Prostatic Resection and Reasons Therefor. G. J. Thompson, Rochester, Minn.—p. 409.
Consideration of Peptic Ulcer. R. S. Boles and B. P. Widmann, Philadelphia.—p. 412.
Refinements of Technic in Barbiturate Obstetric Analgesia. O. J. Toland and J. H. Dugger, Philadelphia.—p. 420.
Renal Anomalies. D. L. Simon, Pittsburgh.—p. 423.
Etiology and Diagnosis of Allergic Rhinitis. J. C. Donnelly, Philadelphia.—p. 426.
Physicians and Social Readjustments. R. J. Behan, Pittsburgh.—p. 430.
*Study of Native Agglutinins for Brucella in Human Blood Serums. H. F. Hunt, Danville, and Mary E. Noll, Lewisburg.—p. 432.

Native Agglutinins for Brucella in Blood Serums.—Agglutinins of the Brucella group of organisms have been shown to exist not only in the blood serums from undulant fever patients but in the blood serums of apparently normal individuals as well. Because of this, Hunt and Noll studied the extent and significance of these native agglutinins in 1,000 specimens of blood that were collected without selection of cases from patients or blood donors admitted. Of the 1,000 samples 195 gave positive reactions. Of this number 106, or 10.6 per cent, were considered without significance and eighty-nine, or 8.9 per cent, significant. Of the 195 positive reactions, 177 reacted both with the Brucella abortus and the Brucella melitensis antigens. Of these 177 reactions, 153 reacted more strongly with Brucella abortus and twenty-four more strongly with Brucella melitensis. Of the remaining positive reactions, fifteen reacted only with the Brucella abortus antigen and three with only the Brucella melitensis antigen. It is concluded that the Brucella abortus agglutinins are far more frequent in human blood serums of individuals of central Pennsylvania than are the agglutinins of the Brucella melitensis, for out of a total of 195 positive reactions 168, or 86.15 per cent, reacted either more strongly or only with the Brucella abortus antigen.

Rhode Island Medical Journal, Providence

20: 35-52 (March) 1937

Surgery in the Management of Pulmonary Tuberculosis. E. Windsberg, Providence.—p. 35.
The Reorganized State Department of Health. E. A. McLaughlin, Providence.—p. 42.

Southwestern Medicine, Phoenix, Ariz.

21: 75-110 (March) 1937

Tuberculous Infection With and Without Previous Infection; Rule of Sensitivity; Interpretation of Tuberculin Reactions and X-Ray Films of Children: Cases. H. Randolph, Phoenix, Ariz.—p. 75.
Treatment of Carcinoma of Cervix at City County Hospital. L. Green, El Paso, Texas.—p. 77.
Trachoma Treatment at Fort Apache "Trachoma School." J. C. Hancock, Fort Apache, Ariz.—p. 80.
Certain Complications of Influenza. J. J. Gorman, El Paso, Texas.—p. 83.
Causes and Treatment of Nasal Obstruction. L. L. Albert, Tucson, Ariz.—p. 84.
Experience with Injection Treatment of Hernia. R. F. Palmer, Phoenix, Ariz.—p. 86.
Postpartum Cervix, with Notes on Its Relation to Incidence of Carcinoma. A. G. Murphy, Ignatio, Colo.—p. 88.
Syphilis: Its Ramifications. G. S. Chapin, Hollywood, Calif.—p. 94.
Fractures of Mandible. J. G. Shackelford, Phoenix, Ariz.—p. 96.

Surgery, St. Louis

1: 163-322 (Feb.) 1937

Treatment of Congenital Openings of Rectum into Vagina: Atresia Ani Vaginalis. V. C. David, Chicago.—p. 163.
*Further Laboratory and Clinical Experiences in Treatment of Chronic, Undermining, Burrowing Ulcers with Zinc Peroxide. F. L. Meleney and Balbina A. Johnson, New York.—p. 169.
Complete Compound Comminuted Fracture-Dislocation of Astragalus. H. E. Conwell, Birmingham, Ala., and R. H. Alldredge, New York.—p. 222.
Operative Treatment of Hydronephrosis Due to Obstruction at Ureteropelvic Junction. C. D. Creevy, Minneapolis.—p. 228.
Effects of Ureteral Occlusion on Blood Flow and Oxygen Consumption of Kidneys of Unanesthetized Dogs. S. E. Levy, M. F. Mason, T. R. Harrison and A. Blalock, Nashville, Tenn.—p. 238.
Cause of Death in Liver Peritonitis: Blood Chemistry Findings in Dogs Subjected to Intraperitoneal Implantation of Fresh, Ground, Adult Dog Liver. H. M. Trusler and H. E. Martin, Indianapolis.—p. 243.
Acute Appendicitis: Review of 518 Cases in the University of Minnesota Hospitals from 1932 to 1935. L. Sperling and J. C. Myrick, Minneapolis.—p. 255.
Evipal Anesthesia: Clinical Study of 300 Cases. J. E. Dunphy, R. E. Alt, Boston, and W. A. Reiling, Dayton, Ohio.—p. 265.
Blood Concentration Produced by Plasmapheresis. H. N. Harkins and P. H. Harmon, Chicago.—p. 276.
Persistent Hypertension Due to Hypothalamic Injury. C. W. Walter and M. J. Pijoan, Boston.—p. 282.

Treatment of Undermining Ulcers with Zinc Peroxide.—Since the publication of their first reports on the favorable effect of zinc peroxide on anaerobic and micro-aerophilic infections, Meleney and Johnson studied in some detail nineteen other cases with chronic undermining burrowing ulcer caused by a micro-aerophilic hemolytic streptococcus. Bacteriologic laboratories equipped to do anaerobic bacteriology are of utmost importance in the recognition of these cases. It would be well if the American College of Surgeons would require class A hospitals to be prepared to do adequate anaerobic bacteriology. The careful application of zinc peroxide will almost invariably halt the spread of this infection. There are certain essential conditions for the success of this treatment. First, the zinc peroxide must have certain physical properties that will provide the necessary environment to inhibit or destroy the causative organisms. These properties may be determined by a simple laboratory test. It must be heated at from 130 to 140 C. for from one to four hours to sterilize it and

mobilize the oxygen. When it is suspended in ten parts by weight of distilled water it sediments rapidly, leaving a clear supernatant fluid. In the course of an hour bubbles of oxygen begin to form in the sediment, which after twenty-four hours becomes flocculent and curdy with the evolution of a considerable quantity of oxygen gas. Five grams in 50 cc. of distilled water should liberate from 10 to 20 cc. of oxygen in twenty-four hours. The next requirement for the successful use of zinc peroxide is that every part of the infected surface must come in contact with it. If this is not possible without operation, undermined flaps and sinuses should be widely opened and all the infected surfaces should be flooded with a creamy suspension of the powder in distilled water, approximately equal parts of water and powder being used. This should be put on in the form of a thick cream which is able to run to all parts of the wound. The wound should then be packed with fine-meshed gauze or silk ribbon soaked in the same material and sealed with petrolatum or zinc oxide gauze to prevent evaporation, drying, crumbling or caking. A fresh dressing should be applied every twenty-four hours. As soon as the undermined flaps have sealed down and new skin has begun to grow in from the margins, the ulcer may be covered with skin grafts of the Reverdin type held in place with a single layer of coarse meshed gauze, sealed to the skin margins with collodion; then a dressing of fine meshed gauze soaked in saline solution should be applied and sealed over with petrolatum gauze to prevent evaporation. The compresses should be removed in twenty-four hours and a thin suspension of zinc peroxide applied over the coarse meshed gauze and sealed in turn with an impermeable covering. Forty-eight hours after the skin graft, the coarse meshed gauze may be carefully removed, leaving the grafts well supplied with blood. Thereafter the grafted area may be flooded daily in the same way as the rest of the wound with a creamy suspension of zinc peroxide. If possible, frequent cultures should be taken of various parts of the wound to indicate the presence or absence of the infecting organism. This disease should not be confused with the gangrenous type of chronic ulceration.

Tennessee State Medical Assn. Journal, Nashville

30: 85-118 (March) 1937

Some Details in Management of Cases of Enlargement of the Prostate. J. C. Pennington and E. C. Lowry, Nashville.—p. 83.
So-Called "Subacromial Bursitis." C. F. Clayton Jr., Knoxville.—p. 92.
New Departure in Hearing Aids. F. L. Alloway, Kingsport.—p. 99.

Texas State Journal of Medicine, Fort Worth

32: 721-788 (March) 1937

Tumors of Spinal Cord: Reporting Series of Twelve Cases. A. O. Singleton, T. G. Blocker Jr. and H. Williams, Galveston.—p. 726.
Transurethral Surgery. G. J. Thompson, Rochester, Minn.—p. 735.
*Effect of Hyperthyroidism on Diabetes Mellitus. P. K. Smith, Wichita Falls.—p. 739.
Linitis Plastica. R. P. O'Bannon, Fort Worth.—p. 743.
Some Aspects of Cardioroentgenography. L. H. Ledbetter, Beaumont.—p. 748.
Incidence of Syphilis in Dallas and Vicinity as Determined by Serologic Methods: Analysis of More than 39,000 Cases. M. D. Bell, Dallas.—p. 753.
Diagnosis and Treatment of Ectopic Pregnancy. M. A. Walker Jr., Paris.—p. 755.
Cystic and Solid Tumors of Ovary. W. R. Cooke, Galveston.—p. 759.
Limitations of Radiation Therapy in Dermatology. P. Brown, Fort Worth.—p. 762.
Pitfalls in Ophthalmology. J. G. Jones, Dallas.—p. 764.
Value of a County Health Unit. W. K. Sharp Jr., New Orleans.—p. 766.

Effect of Hyperthyroidism on Diabetes Mellitus.—Smith points out that there is a distinct similarity between these two diseases in their effect on the human body. Some of the symptoms and signs that are almost interchangeable in hyperthyroidism and diabetes mellitus are: (1) rapid loss of weight, (2) nervous irritability which is more marked in the hyperthyroid state, (3) low respiratory quotient, (4) increased protein metabolism and (5) absent or diminished liver glycogen. In the combination of the two diseases, one is dealing with a patient who may have a metabolic rate twice normal and a caloric intake which may satisfy only one half of his total needs. It follows, therefore, that the remainder of the caloric requirement must come from the patient's own body fat. With the entrance of such a large amount of fat into the metabolic mixture plus the inability to oxidize a normal amount of dextrose, the tendency to acidosis is greatly increased. The problem resolves itself into adequate dosages of insulin to cause burning of the proper amount of dextrose and a lowering of the metabolic rate by the use of iodine. The further control of the hyperthyroid state may be accomplished with either surgery or roentgen therapy. The results of irradiation and surgery of the thyroid are equally successful in the control of primary hyperthyroidism. In the condition of adenoma of the thyroid with secondary hyperthyroidism, surgery is the therapeutic method of choice. The rôle of the thyroid in its actions on carbohydrate metabolism is not definitely known; however, it has been shown that it helps mobilize the liver glycogen and, in the hyperactive state, renders a patient insensitive to insulin. This may all be explained by its governing influence on the metabolic rate. For instance, conditions which lower the metabolic rate, such as fasting or wasting diseases, apparently help an uncomplicated diabetes, and conditions which increase the metabolic rate, such as fever, injections of epinephrine, pregnancy or a diet high in protein, intensify a diabetic state.

Western J. Surg., Obst. & Gynecology, Portland, Ore.

45: 119-180 (March) 1937

Diagnosis and Treatment of Abdominal Pregnancy: Report of Three Illustrative Cases. L. G. McNeile, Los Angeles.—p. 119.
*Masculinizing Tumors of Ovary. Alice F. Maxwell, San Francisco.—p. 134.
Incidence of Carcinoma in Fibroid Uterus. H. Von Geldern, San Francisco.—p. 148.
Uterine Inertia in the First Stage of Labor. D. G. Tollefson and A. M. Webb, Los Angeles.—p. 156.
Conservative Renal Surgery with Particular Reference to Resection of Kidney. E. Hess, Erie, Pa.—p. 168.

Masculinizing Tumors of Ovary.—Maxwell points out that virilism in women may develop from a variety of causes, as is exemplified by the heterosexual manifestations associated with pituitary basophilic adenoma, adrenocortical tumors and hyperplasia, pseudohermaphroditism, the so-called Achard-Thier's syndrome and ovarian neoplasms which possess characteristic biologic function, such as arrhenoblastoma and adrenocortical ovarian inclusions. While it is accepted that sex of the individual is determined at the time of fertilization, the occurrence of heterosexual phenomena leads to speculation as to the completeness of the demarcation of the characteristics regarded as specific to either sex. The embryonic bisexual anlagen of the gonads offer a medium for sexual ambiguity. Nor is there mutual exclusion even in normal individuals of the gonadal secretions of the opposite sex, for androgen has been demonstrated in the body fluids of women and estrogen in the tissues of men. These observations lead to the conclusion that, while the sex of the individual is determined at the moment of the union of the maternal and paternal cells, the somatic expression and biologic function of the sexual apparatus are largely dependent on the nicety of balance and the orderly interrelationship of all the complex units of the endocrine system.

West Virginia Medical Journal, Charleston

33: 97-144 (March) 1937

Psychology of Childhood. E. F. Reaser, Huntington.—p. 97.
Study of Silicosis. G. Fordham, Powellton.—p. 106.
Furious Rabies with Necropsy Findings: Case. F. J. Holroyd, Princeton.—p. 109.
Intestinal Obstruction Mortality. E. B. Tucker, Morgantown.—p. 113.
Bilateral Bony Ankylosis of Jaw. H. G. Weiler, Wheeling.—p. 117.
Fever of Unknown Origin. F. R. Whittlesey, Morgantown.—p. 120.
Importance of Periodic Physical Examinations. J. J. Brandabur, Huntington.—p. 125.

Wisconsin Medical Journal, Madison

36: 149-232 (March) 1937

Tumors of Urinary Bladder. J. B. Wear and P. Kundert, Madison.—p. 165.
Urinary Calculus: Modern Management: Discussion of Stone Forming and Dissolving Factors: Preliminary Report on Vitamin A Injections, Diet and Lactic Acid Therapy. W. M. Kearns, Milwaukee.—p. 170.
Blood Calcium Studies in Urinary Lithiasis. C. R. Marquardt, Milwaukee.—p. 177.
Diagnosis and Treatment of Traumatism and Foreign Bodies in Urogenital Tract. R. Irwin, Milwaukee.—p. 182.
Heterophoria: Incidence of, in Routine Refractions with an Analysis of 2,000 Cases. H. G. Martin, Milwaukee.—p. 186.
Syphilis in Wisconsin. W. F. Lorenz, Madison.—p. 188.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

Archives of Disease in Childhood, London

12: 1-70 (Feb.) 1937

*Chronic Miliary Tuberculosis in Children. R. H. Fish.—p. 1.
Milk Curd: Its Mechanism and Modification. I. N. Kugelmass.—p. 25.
*Significance of Plasma Phosphatase in Diagnosis and Prognosis of Rickets. N. Morris, Mary M. Stevenson, Olive D. Peden and Jean M. D. Small.—p. 45.
Persistent Truncus Arteriosus Communis with Microphthalmos, Orbital Cyst and Polydactyly. H. A. Harris and G. C. Thomson.—p. 59.

Chronic Miliary Tuberculosis in Children.—Fish presents a survey of the literature, discusses the differential diagnosis and cites ten cases of chronic miliary tuberculosis occurring in childhood with recovery in four. Microscopic sections of the lungs in three of the fatalities demonstrated the healing process in individual miliary nodules. From his observations he concludes that miliary tuberculosis runs a chronic course more frequently than is generally recognized; recovery occurs in a fair proportion of these chronic cases. Recovery is most common when the nodules are confined to the lungs, but it may also take place in generalized cases and even when the onset of the illness is moderately acute. The pathology of the lesions in chronic and acute cases is essentially the same. Healing of individual miliary tubercles takes place by a process of fibrosis which usually leads to their complete disappearance from the pulmonary roentgenograms. Massive caseous glands in the upper mediastinum are observed frequently in the juvenile type of chronic miliary tuberculosis; the presence of these glands may be responsible for the tendency to recurrent episodes of tuberculous bacillemia, which is a feature of these cases. Any one of these episodes may give rise to fatal meningitis; the risk of this complication occurring is, however, considerably diminished if strict rest in bed is maintained until the roentgenogram is clear.

Plasma Phosphatase in Diagnosis and Prognosis of Rickets.—Morris and his associates try to assess the value of plasma phosphatase as a diagnostic test for rickets and also as a means of determining the presence and rate of healing. The results are based on the examination of 506 children less than 2 years of age who either had manifest rickets or might possibly have been suffering from the effects of vitamin D insufficiency. The method employed for estimating phosphatase was that devised by Jenner and Kay. In a series of healthy infants of the same age the limits for plasma phosphatase fell between 3.4 and 10.5 units, with an average of 6.92 units. Any value above 11 units has been considered to be higher than normal. In 84.1 per cent of the 506 children with clinical or roentgen evidence of rickets the plasma phosphatase was increased above normal limits. It is suggested that a rise in plasma phosphatase is an earlier manifestation of the rachitic state than that provided by ordinary clinical or roentgen examination. A rough parallelism was observed between the height of the phosphatase and the severity of the rachitic process, but the level of the phosphatase cannot be taken as an index of severity in the individual patient. A moderate degree of correlation was observed between the rise in phosphatase and the fall in phosphorus and calcium phosphorus product, especially the latter, and it would appear that, of the three, an increase in plasma phosphatase is the most delicate test of the rachitic state, although an alteration in phosphatase alone should not be used as conclusive evidence of the presence or absence of rickets. The plasma phosphatase continues to rise in untreated active rickets. Administration of vitamin D prevents this rise and causes a fall in from two to three weeks. The rate of fall depends on the dosage of vitamin D. On the administration of ordinary therapeutic doses, normal limits may not be reached before the lapse of more than three months. The phosphatase is increased whenever the supply of calcium is unable to meet the demand of the bone cells as a result of defective intake of minerals or vitamin D.

British Journal of Ophthalmology, London

21: 113-160 (March) 1937

Hemophilia and Color Blindness Occurring in Same Family. W. J. B. Riddell.—p. 113.
"Twincentric" Lenses. F. A. Williamson-Noble.—p. 116.
Development of Modern Methods of Estimating Refraction. W. B. E. McCrea.—p. 118.
Study of 288 Patients Examined with Ophthalmo-Eikonometer. C. Berens.—p. 132.

British Journal of Radiology, London

10: 73-140 (Feb.) 1937

Delivery, Estimation and Control of Tissue Dosage in Radiation Therapy. C. A. P. Wood and T. A. Green.—p. 73.
Directional Caliper: Its Clinical Uses in Radiation Therapy. T. A. Green.—p. 95.
Useful Accessory to Directional Caliper. J. Read.—p. 102.
Five-Gram Radium Unit, with Pneumatic Transference of Radium. L. G. Grimmett.—p. 105.
Measurement of Distribution in Water of Intensity of Radiation from Five-Gram Radium Unit No. II of Radium Beam Therapy Research. E. E. Wright.—p. 118.
Lateral View of Lung Apexes (Interclavicular Projection of Thoracic Inlet). E. W. Twining.—p. 123.

British Medical Journal, London

1: 431-482 (Feb. 27) 1937

Nocifensor System of Nerves and Its Reactions. T. Lewis.—p. 431.
Food and Nutrition. E. P. Cathcart.—p. 435.
"Disposition" and Specific Allergen in Asthma, Hay Fever and Other Allergic Conditions. E. M. Fraenkel.—p. 438.
Posthysterectomy and Puerperal Tetanus: Study of Bacteriology of Obstetric and Gynecologic Dressings. R. J. V. Pulvertaft.—p. 441.
Prontosil Album in Puerperal Sepsis. M. A. Foulis and J. B. Barr.—p. 445.

1: 483-540 (March 6) 1937

*Nasopharyngeal Sepsis in 2,056 Cases of Mental Disorder: Importance of Closed Sepsis. T. C. Graves.—p. 483.
Zinc Protamine Insulin: Clinical Trial of New Preparation. R. D. Lawrence and Nora Archer.—p. 487.
Nocifensor System of Nerves and Its Reactions. T. Lewis.—p. 491.
Active Immunization Against Tetanus. H. H. Brown.—p. 494.
Death Following Blood Transfusion: Notes on Two Cases. F. Pygott.—p. 496.

Nasopharyngeal Sepsis in Cases of Mental Disorder.—Graves summarizes the observations and treatment of 2,056 cases of mental disorder—mainly certified—by three ear, nose and throat surgeons working separately during the nine years from 1927 to 1935 in the Birmingham Mental Hospital. On admission all patients had a routine investigation of the mental and physical states, including a preliminary examination for disease conditions in the ear, nose and throat. Patients in whom a history of mental or physical symptoms suggested such a condition were further investigated by the visiting rhinologist, employing special methods of examination when desirable. On these observations and after consultation between the visiting and resident medical staffs, cases thought suitable on mental and physical grounds for further investigation and likely to tolerate the appropriate anesthesia were selected. Appropriate treatment was then given, although this stage of active investigation and treatment was not generally carried out until the mouth was free from sepsis. In tuberculosis, hemoptysis may first draw attention to the disease. Symptoms of dementia paralytica may be the first indication of syphilis. Mental depression following influenza may continue until an area of residual infection in the nasal sinuses is treated effectively, when the psychotic disturbance passes away. In some cases of nasal sinus disease mental symptoms may be among the first of the signs and symptoms directing the attention of the family or physician to the fact that the patient is ill. In some cases in which nasal sinus disease is present an examination of the nasal passages may show only doubtful signs or none at all, the condition being one of closed sepsis. In such cases an inflamed sinus is unable to discharge its exudate owing to closure of its ostium, and as a result internal absorption and extension of inflammation takes place from the diseased membrane. If drainage is prevented, complications arise, one of which is delirium, which sometimes precedes death. Should the patient survive, mental disorder and perhaps certifiable insanity may ensue and continue, as the result of the persistence in an important site of a small area of "occult" sepsis, which acts as the primary port of entrance of infection and is responsible for the obvious and dramatic collection of pus elsewhere.

Journal of Neurology and Psychopathology, London

17: 193-288 (Jan.) 1937

Cerebral Circulation: Some New Points in Its Anatomy, Physiology and Pathology. T. J. Putnam.—p. 193.
Investigation of Absorption of Ultraviolet Light by Cerebrospinal Fluid in Various Disease States. E. F. Skinner.—p. 213.
Associated Facial, Vocal and Respiratory Components of Emotional Expression: Experimental Study. H. W. Magoun, D. Atlas, E. H. Ingersoll and S. W. Ranson.—p. 241
Paroxysmal Trigeminal Pain with Tumors of Nervus Acusticus. H. L. Parker.—p. 256.
Diagnosis of Chronic Subdural Hematoma of Traumatic Origin. G. S. Hall.—p. 262.

Journal Obst. & Gynaec. of Brit. Empire, Manchester

43: 1037-1256 (Dec.) 1936

Further Observations on Relation of Pregnancy to Hypertension and Chronic Nephritis. G. W. Theobald.—p. 1037.
*Achlorhydria as an Etiologic Factor in Pruritus Vulvae, Associated with Kraurosis or Leukoplakia. B. H. Swift.—p. 1053.
Place of Induction of Premature Labor in Treatment of Pelvic Disproportion. A. H. Davidson.—p. 1078.
Treatment of Amenorrhea and Kraurosis Vulvae with Follicular Ovarian Hormone. G. L. Foss.—p. 1091.
Red Light Treatment in Gynecology. H. Heymans van Amstel.—p. 1114.
*Study of Variations in Number of Blood Platelets During Menstrual Cycle. S. Genell.—p. 1124.
Recent Findings in Solid Ovarian Tumors. W. Schiller.—p. 1135.
New Ergot Preparation: Ergometrine. E. Hauch and E. Möller-Christensen.—p. 1145.
Two Rare Cases of Inversion of the Uterus. Margaret Fairlie.—p. 1152.
Roentgen Pelvimetry. H. Litwer.—p. 1158.
Conservative Therapeusis in Gynecology. H. de Sa.—p. 1162.
Minor Degrees of Calcium Deficiency in Pregnancy in India. P. C. Dutta.—p. 1170.
Effect of Administration of Estrone and Progesterone on Human Uterus. M. C. Watson.—p. 1175.
Etiology of Toxemias of Pregnancy. E. K. Maclellan.—p. 1180.
Lithopedion. W. C. W. Nixon.—p. 1183.
Theca Cell Tumor of Ovary in Woman Aged 92 Years: Case. J. H. Patterson and W. M. H. McCullagh.—p. 1186.
Periendothelioma of Fallopian Tubes. J. W. Bride.—p. 1191.
Accessory Lobe of Lung. H. Carter and H. A. Osborn.—p. 1194.

Achlorhydria an Etiologic Factor in Pruritus Vulvae.—Swift points out that a common factor is present in pruritus vulvae, leukoplakia, kraurosis vulvae and leukoplakic vulvitis and that this factor is achlorhydria, which causes a deficiency of absorption of vitamin A from the diet. Changes in epithelial structures result from this deficiency. These skin changes do not always conform to the same clinical type but depend on the stage of the disease, and so in the past they have been given many different names. However, the original cause is the same in all types. Occasionally an achlorhydria is not present, and it has been found that in these cases the diet itself is deficient in vitamin A. The addition of diluted hydrochloric acid to the normal diet of forty-two women suffering from intractable pruritus vulvae with achlorhydria relieved the pruritus in the majority of cases with great improvement of the local vulval condition. Vitamin A in the form of cod liver oil should also be given. Excision of the vulva is not necessary in these cases except in those in which a malignant change is suspected. Epithelioma of the vulva should become increasingly more rare if this chronic irritation is relieved at an early stage by the giving of oil and acid. Achlorhydria is often present in cases of pruritus vulvae in which the irritation has not been relieved by curing the supposed primary cause. The diluted hydrochloric acid is given by mouth, a teaspoonful in a glass of water. Half of this solution is to be sipped during the meal and the other half drunk after the meal. The acid is to be taken with each meal. The acid must be taken for many weeks, as in a number of cases the irritation has returned when the patients have left off the acid, if only for a few days. A teaspoonful of cod liver oil is taken three times a day. Local treatment is prescribed to patients with very bad irritation. A cream made of zinc oxide and starch with sweet oil of almonds has been found to be most soothing. It can be cleaned off the vulva by wiping with more almond oil. In other cases a local anesthetic ointment has been used. However, as soon as the patient had started taking the hydrochloric acid the pruritus usually started to improve. Any associated cause or causes should also be treated. When infection has been superimposed on the hypertrophic or atrophic conditions, local treatment should be given, such as sitz baths and the application of a soothing lotion. At the same time the original cause, the achlorhydria, should also be treated with acid.

Variations in Number of Blood Platelets in Women.—Genell performed 1,433 determinations on thirty-eight women in studying the variations in the number of blood platelets during the normal menstrual cycle. On the first day of menstruation there is a fall in the number of platelets from about 230,000 per cubic millimeter to about 200,000. During the first ten days of the cycle there is a slow rise in the number of platelets, the culmination being reached about the eleventh day with about 265,000 per cubic millimeter. From the eleventh to about the twenty-first day the number slowly declines to about 230,000. During the last week of the cycle the number remains constant at 230,000 until the sudden diminution occurs at the onset of menstruation. These variations are not due to variations in the concentration of the follicular hormone. The author shows that a similar increase in platelets occurs after parturition, after abortion and after operation. As the change in the concentration of estrogen after parturition and abortion is quite the reverse of that after menstruation, and the estrogen can have no connection with postoperative changes, it is not possible to regard the postmenstrual increase in platelets as standing in a causal relation to the hormone of the follicle. The author explains the analogous increase in platelets after menstruation, parturition, abortion and operation as a reaction of the organism to resorption of necrosed material and he finds this explanation corroborated by the fact that the degree and duration of the platelet increase on these different occasions occur together with the degree and duration of the resorption.

Journal of Tropical Medicine and Hygiene, London

40: 25-36 (Feb. 1) 1937

Filariasis in Antigua. F. W. O'Connor.—p. 25.
Vitamin Deficiency in Bilharzia Disease and Some Successes with Anthiomaline. F. G. Cawston.—p. 31.

40: 37-52 (Feb. 15) 1937

Hematophagous Fly Musca Sorbens, Wied., in Relation to Transmission of Leprosy. W. A. Lamborn.—p. 37.
Filariasis in Antigua. F. W. O'Connor.—p. 42.

Lancet, London

1: 369-426 (Feb. 13) 1937

*Anorexia Nervosa, with Especial Reference to Physical Constitution. J. H. Sheldon.—p. 369.
Intranuclear Inclusions in Epithelium of Human Male Genital Tract. J. R. Gilmour.—p. 373.
Treatment of Fracture of Neck of Femur: New Principle of Wire Introduction for Smith-Petersen Nail. E. T. Bailey.—p. 375.
*Fate of Thorium Dioxide (Thorotrast) in Cerebral Arteriography. D. W. C. Northfield and Dorothy S. Russell.—p. 377.
Postural Drainage. H. V. Morlock.—p. 381.
Thrombosis of Popliteal and Femoral Arteries. A. M. Boyd.—p. 382.

Nervous Anorexia and Physical Constitution.—Sheldon emphasizes physical aspects of nervous anorexia which suggest that in some cases there is an underlying hypofunction of the anterior pituitary, but he does not intend to amend the current conception of the disease—that the loss of appetite begins in response to some psychologic need and, once established, is perpetuated as a hysterical condition. This conception is borne out by the fact that physical treatment for the anorexia is out of place, the patients being able to recover their appetite with suitable psychologic help alone. A common emotional cause will explain both the anorexia and the amenorrhea often associated with it. But in the chain of events that leads to the amenorrhea the pituitary must be involved, and there is often evidence that the functions of this gland are already subnormal. The deficiency may show itself by small height, delayed onset of puberty, infantile uterus, adolescent obesity and in other ways. The symptoms of nervous anorexia—loss of appetite and weight, amenorrhea, low basal metabolism and alterations in carbohydrate metabolism—are so similar to those of Simmonds' disease as to suggest that in these cases one is really dealing with a "functional" Simmonds' disease—a pituitary "black-out" of psychologic origin. It is possible that only a certain type of body-mind reacts in this particular way, that the infantility which often characterizes the psychologic background may be the counterpart of an actual endocrine infantility.

Fate of Colloidal Thorium Dioxide in Cerebral Arteriography.—Northfield and Russell describe four cases in which, after arteriography with colloidal thorium dioxide, histologic evidence was obtained of retention in the lumen or walls of

the cerebral vessels or in the perivascular macrophages. Such retention appears to be liable to take place in the neighborhood of compressing lesions, such as meningioma, a large hemorrhage or chronic abscess. The aggravation of clinical symptoms that was observed in two of the cases and the retardation of recovery from operation in one may be attributable to this occlusion of vessels by colloidal thorium dioxide. The use of colloidal thorium dioxide is inadvisable unless exact diagnosis is unattainable without it.

Medical Journal of Australia, Sydney

1: 117-156 (Jan. 23) 1937

Further Studies of Pollen Content of Melbourne Air. M. M. Sharwood. —p. 117.
Infestation of Man with Trichostrongylus Colubriformis from Sheep. I. C. Ross.—p. 122.
Trichomonas Vaginalis Vaginitis as Cause of Pruritus Vulvae. B. H. Swift.—p. 123.

1: 157-192 (Jan. 30) 1937

Midwifery Since the Time of Ambroise Paré. A. H. Marks.—p. 157.
George Bass, the Surgeon and Explorer. E. Scott.—p. 165.
*Influence of External Temperature on Blood Sedimentation Rate. D. B. Rosenthal.—p. 172.

1: 193-226 (Feb. 6) 1937

Main Varieties of Arterial Diseases. R. Muir.—p. 193.
Hydatid Disease: Survey of Sixty Cases. J. Le M. Kneebone.—p. 201.
Hydatid Disease in Children. H. B. Graham.—p. 206.

1: 227-272 (Feb. 13) 1937

New Complete Range of Splints and Fracture Reducing Apparatus Designed on "Universal" Principle. L. Buchanan.—p. 227.

Influence of Temperature on Blood Sedimentation Rate.—Rosenthal declares that a sedimentation index of say 17 mm., measured on a summer's day, may well be the equivalent of 5 mm. in the same subject on a winter morning; while a "diagonal curve" on a hot day might have the same significance as a "horizontal line" during a cold spell. A standard temperature for the performance of the test is eminently desirable: 68 F. is suggested as a convenient standard. When it is impracticable to perform the test under standard conditions, the practice of noting the room temperature when the readings are quoted should be followed so that due provision for temperature variation may be made. Mathematical correction for temperature variation at present is not practicable. The disparity between the sedimentation index and the cell volume indicates approximately to what extent the former is a measure of the sedimentation velocity, and the recording of the cell volume at the end of each test would be a valuable procedure. By centrifugating the tube, or immersing it in a water bath at about 100 F., the figure for cell volume could be rapidly, if approximately, obtained. The height of the column of cells, that is, of the sediment, quoted as a percentage of the total height of the blood column (which, in Cutler's method, is approximately 5 cm.) is a suitable index for cell volume. A complete statement on the result of a blood sedimentation test would then read somewhat thus: (1) for "slow" blood: 8 mm., 63 F., 55 per cent; (2) for "fast" blood: 28 mm., forty minutes, 63 F., 40 per cent.

Journal of Oriental Med., Dairen, S. Manchuria

26: 19-36 (Feb.) 1937

Adsorption by Various Adsorptive Substances of Specific Precipitable Substance in Blood: Part I. Experiments with Anti-Human Blood Serum Precipitine. Wang Shih-Kong.—p. 19.
Growth of BCG and Tubercle Bacilli on Calmette's Mediums. T. Hashimoto.—p. 21.
Cultivation of Streptobacilli of Ducrey. T. Akiyama.—p. 22.
Hygienic Study of Two Newly Built Residences with Different Types of Outer Wall. E. Ito.—p. 23.
Study of the Hard Palate of the Chinese. S. Ohshima.—p. 24.
Experimental Study of Influence of Sympathectomy on Regeneration of Skin Wounds. S. Hayashi.—p. 26.
Verification of Tubercle Bacilli in the Blood Stream. K. Fukumoto.—p. 27.
The Eggs of Intestinal Parasites Attached to "Tukemono." Y. Morikawa and S. Fukuda.—p. 29.
Statistics on Eye Tuberculosis of the Japanese in Manchuria. H. Isayama.—p. 30.
Perforative Peritonitis Due to Bacterial Dysentery. S. Baba and I. Saito.—p. 31.
Statistical Observations on Appendicitis. S. Baba.—p. 32.
Malignant Hypernephroma with Rebellious Lumbago: Case. Y. Saito. —p. 34.
Study of Anaerobic Bacteria: Part III. Influence of Various Acridine-Derivatives on Anaerobic Bacteria. H. Inoue.—p. 35.
Id.: Part IV. Relation Between Pigments and Anaerobic Bacteria. H. Inoue.—p. 36.

Bruxelles-Médical, Brussels

17: 689-725 (March 7) 1937

*Central Renal Abscess with Hematuria. A. Leruitte.—p. 689.
Congenital Stricture of Aortic Isthmus. C. Lian and J. Facquet.—p. 708.
Bazin's Indurated Erythema and Pregnancy. J. Piérard.—p. 712.

Central Renal Abscess.—Leruitte draws attention to a clinical variety of pseudoplastic renal abscess that has not yet been described in urologic literature. It manifests itself by profuse hematurias but by no other clinical signs that would lead one to suspect suppuration of the kidneys. The etiologic factor is the colon bacillus found alone in the urine. Preceding trauma or previous infections seem to be of little plausibility as to etiology. Pathologically, the kidney in which an abscess develops retains its normal macroscopic aspect for a long time. It becomes tumor-like only when the abscess has penetrated to the periphery. It always opens into the pelvis. The abscess is of the miliary type and, situated mainly in the interstitial tissue, it sometimes also includes glomeruli which are either congested or atrophied, and excretory tubules, some of which are dilated and others show cellular obstruction of the lumen. A conglomeration of miliary abscesses is easier to explain than would be a causative infarct, which would produce deeper and wider destructions. The phenomena of congestion are alone capable of causing hematuria, as it is well known that even the slightest ulceration of a malpighian pyramid will make a kidney bleed, owing to a particular vulnerability of the renal vessels. The clinical examination reveals a temperature of about 98.5 to 99 F. and, on palpation, a localized pain in the costolumbar angle. But the main clinical symptom is continuous painless hematuria supplemented by pyelographic observations of functional deficiency and alterations of the renal pelvis. In the three cases under the author's observation there were vermiform clots presenting veritable casts of the ureter, pus and numerous colon bacilli. One pyelogram showed a lesion in the superior extremity of the left calix whose shadow was less dense than that of the pelvis. Another showed the shadow of the inferior calix together with the lacunary shadow separated from the pelvis owing to compression by the abscess. Differential diagnosis must be made from scurvy, leukemia, purpura, hemophilia and medicamentous hematurias in infectious diseases. Renal tuberculosis, hematuric pyelonephritis and infected renal calculi are all attended by cystic phenomena not existing in pseudoplastic central abscesses of the kidney. The best method of treatment is exploratory nephrotomy, which must afford the assurance that all abscesses have been opened. But Marion maintains that there is no reason for haste unless the symptoms are severe, in which case decortication is not sufficient and nephrectomy should be resorted to. Spontaneous cure is possible in mild cases.

Bull. et Mém. de la Soc. des Chirurgens de Paris

29: 1-56 (Jan. 8) 1937

*Pseudofracture of Acetabulum in Children and Ischium Varum. L. Lamy and J. Vincent.—p. 29.
Acute Osteomyelitis Continuing Despite Three Successive Operations Cured by Phagotherapy. A. Raiga.—p. 42.

Pseudofractures of Acetabulum in Children.—Lamy and Vincent examined a number of children referred to them with alleged fractures of the acetabulum. This diagnosis is often made from roentgenograms falsely interpreted. They are dealing with patients whose cartilages have not yet become ossified and in whom the roentgenograms were taken obliquely with the patient in an anteroposterior and somewhat rotated position. The authors could verify this fact by changing the position of the child on the x-ray table. The new roentgenograms thus obtained no longer show any "lesion." By turning the patient on the other side they could obtain the same picture on the unsuspected side. The three primary centers of ossification of the coxa appear between the second and fourth intra-uterine months. At birth they are separated by three cartilaginous lamellae. But the converging center does not correspond to the geometric center of the acetabulum even in the older child. For this reason the inferior cartilage, which is vertical, is not seen in an anteroposterior roentgenogram. If the ilium is in a normal position with no lateral rotation and no anterior or posterior inflexion, the ilio-ischiatic and the iliopubic shadows

appear superimposed. If the ilium is kept vertical but in left to right rotation of about 30 degrees, the posterior part of the cartilage appears below the ilium. If the ilium is somewhat tilted backward but without lateral rotation, the ischium is vertical and appears shortened. If the latter shortening becomes more accentuated, it assumes an ischiopubic direction downward and inward. It thus shows clearly the upper border of the ischium by degaging on the inside the ilio-ischiatic cartilage. Only recently the authors noticed a similar erroneous report in an American journal in which the roentgenogram showed the ischium of the right side displaced downward. The American author even believes that he has corrected the "displacement" by reducing the flexion and abducting the thigh. But the fact remains that the roentgenogram taken several months later shows nothing but a more correct position of the patient on the plate. In the meantime the child also grew and the acetabulum became more ossified. The authors conclude that they are never satisfied with small films. Many roentgenograms may often be necessary and a few modifications of the pelvic posture in order to avoid believing in a fracture with impaction or in a dislocation of the ischial epiphysis. There will also be no reason to speak of ischium varum when there is merely an improper posture assumed by the patient.

Presse Médicale, Paris

45: 313-328 (Feb. 27) 1937

Three Pathogenic Forms of Eczema: Therapeutic Deductions. A. Tzanck and J. Moncharmont.—p. 313.
*Dry Trapeziometacarpal Osteo-Arthritis: Rhizarthrosis of the Thumb. J. Forestier.—p. 315.
Endoscopy and Pleurolysis: Advice to Beginners. P. Weiller.—p. 317.

Dry Trapeziometacarpal Osteo-Arthritis.—After studying about 4,000 cases of rheumatism of the hands, Forestier noticed a degenerative form of arthritis which occurred frequently in the carpometacarpal joint of the thumb. Its symptoms of pain and functional impairment are due to an arthritis in which both bones are involved. Among fifty-seven patients there were fourteen men and forty-three women. The preponderance of women above the age of 50 may have its cause in changes due to the menopause. The onset is marked by pain, which may be spontaneous along the radial aspect of the thumb or caused by vigorous movements or grasping efforts. In rare cases it eventuates in rigidity and functional impotence of the thumb. On examination the metacarpal of the thumb was frequently found fixed parallel with the second metacarpal, from which position abduction was difficult. Often the thenar eminence was so atrophied that the deformed and enlarged first carpometacarpal articulation was visibly protruding. The first stage of the arthritis is characterized by a moderate hypertrophy and slight friction sounds on passive motion. The second stage shows pronounced bony hypertrophy, often attended by swelling and limited abduction. The third stage is marked by considerable bony hypertrophy and eburnation and almost complete ankylosis, as well as external and forward subluxation of the proximal end of the first metacarpal. In the majority of cases the disability becomes bilateral within three years. Physiologically, the hyperthrophic changes of the proximal end of the metacarpal and the widening of the trapezium may be due to the presence of osteophytes and to thickenings around the epiphysis, while the capsule remains normal and the synovial membrane shows only slight fibrinous changes. Roentgenologically the articular interspace diminishes until it entirely disappears. The bony texture appears granular and the reticular outlines are quite modified by calcified deposits. The diagnosis is arrived at through routine examination of the hand, and the disorder must be differentiated from tendovaginitis and from traumatic injuries. This osteo-arthritis may begin slowly and be latent for some years, but it has generally a favorable prognosis, except for the esthetic aspect. The treatment is the same as in other arthroses: iodine, sulfur or glandular therapy. Important is the immobilization of the joint and its protection against cold. Various forms of physical therapy were tried with good results. In one painful case the author performed a drilling operation through the trapezium and the base of the metacarpal after a small incision at the base of the thumb. The holes are about 2 mm. wide, made into the bones at right angles without injury to the capsule. The postoperative results are favorable.

Giornale di Tisiologia, Naples

11: 1-22 (Jan. 31) 1937

*Abdominal Syndromes in Pleurisy. P. Guglielmetti.—p. 1.
*Francke's Striae in Pulmonary Tuberculosis. P. Alimenti.—p. 14.

Abdominal Syndromes in Pleurisy.—Guglielmetti says that the development of abdominal and gastric symptoms in pleurisy is a frequent occurrence, especially in patients having a pneumothorax. The clinical symptoms depend on the location and phase, acute or attenuated, of pleurisy. Acute right pleurisy is complicated by an acute abdominal syndrome with the symptoms of acute conditions of the abdomen or of acute appendicitis. There are intense abdominal pain, diffuse or located at the appendicular region, and muscular rigidity. The abdominal symptoms are not related to the amount of pleural fluid. The former may appear in the absence of the latter. Simultaneously with the abdominal symptoms, gastric disturbances develop. Once pleurisy and its consequent symptoms are established, the abdominal symptoms do not improve by removal of pleural fluid but follow a favorable evolution on regression of the general toxic phenomena. Disturbances of the liver and of the gastric motility are rare. In the nonacute periods of right pleurisy as well as in acute left pleurisy the gastric symptoms predominate over the abdominal ones. They consist in anorexia, nausea, a sensation of fulness after meals, digestive disorders and vomiting. Their intensity and evolution depend on the amount of pleural fluid and improve after removal of the fluid. Abdominal pain in left pleurisy is moderate. It is located at the left hypochondrium. According to the author the most important causal factors of the abdominal and gastric symptoms complicating pleurisy are a propagation of the inflammation from the pleura to the phrenic and the thoracic sympathetic nerves and a rupture of the relations of the organs at the abdominal cavity and at the thorax, due to mechanical disorders of the diaphragm. It is possible that the nervous and diaphragmatic conditions created by pneumothorax make the occurrence of causal factors more frequent in the course of pleurisy in patients having a pneumothorax than in normal persons. In the group of thirty-seven cases reported by the author, the abdominal and gastric symptoms were a complication of right, left or bilateral pleurisy in patients having a pneumothorax.

Francke's Striae in Pulmonary Tuberculosis.—Alimenti calls attention to the frequency, significance and importance of Francke's striae in pulmonary tuberculosis. Francke's striae are small cutaneous venous ectasias of red wine color which generally appear near the seventh cervical vertebra. They may be unilateral or bilateral and sometimes form a small Medusa head. The intensity of the color depends on the duration of tuberculosis. Acording to the author, Francke's striae are a viscerocutaneous reflex which originates in a chronic stimulation from the apex of the lung to the skin. Because of their frequency in pulmonary tuberculosis (45 per cent) they are of diagnostic value, especially in the forms which evolve with few symptoms or no symptoms at all. Francke's striae are also of prognostic value. Their presence shows the existence of fibrocaseous tuberculosis of long duration at the apex, a tendency of the disease to evolute with frequent recurrences, rather than going through a process of stabilization of the disease, and the presence of pleural adhesions.

Minerva Medica, Turin

1: 267-298 (March 18) 1937

Relation Between Reticulocytosis and Regeneration of Erythrocytes. L. Crosetti and G. Bajardi.—p. 273.
*Hemoglobinuria from Malaria: Treatment with Cevitamic Acid. G. Castrovilli.—p. 279.

Cevitamic Acid in Treatment of Malarial Hemoglobinuria.—Castrovilli reports satisfactory results from the daily administration of a hypodermic injection of 0.1 Gm. of cevitamic acid in a case of nephrohemolytic hemoglobinuria in benign tertian malaria, without jaundice and hemoglobinemia. The injection was repeated a second time. During administration of the treatment and for some time after it was discontinued, the patient was given liberal amounts of lemon juice. Hemoglobinuria completely and permanently disappeared after the first vitamin injection. The platelets rose from 150,000 to 200,000. Malaria was controlled by atabrine and plasmochin.

According to the author, the administration of cevitamic acid prepares the body for a general favorable reaction to antimalarial treatment. In the case reported the administration of 0.6 Gm. of quinine and the exposure of the patient's legs to a cold ambient (Ehrlich's test) did not produce hemoglobinuria after recovery of the patient by treatment with cevitamic acid took place.

Pathologica, Genoa

29: 45-88 (Feb. 15) 1937

Strain of "Salmonella" as Agent of Acute Suppurative Nephritis in Small Epidemics. R. Bertoli.—p. 45.
Behavior of Calcium Potassium and Cholesterol in Blood After Total Colon Resection: Experiments. M. Agrifoglio and G. Giannoni.—p. 48.
*Creatinuria in Relation to Endocrine (Sexual) Dysfunction. C. Seghini.—p. 53.
Sarcoma of Round Ligament of Liver: Case. P. Aragona.—p. 58.
Presence of Epinephrine in Prostate and Prostatic Extracts. G. Oneto.—p. 61.

Creatinuria in Relation to Sexual Dysfunction.—Seghini states that alterations of functions (especially sex) cause disturbances of the creatine metabolism, as shown by the appearance of spontaneous creatinuria and elimination of administered creatine. In his experiments on normal rabbits he found that castration induced creatinuria, which disappeared spontaneously a month later or after the administration of testicular extract. When the administration of the testicular substance was discontinued, the creatinuria reappeared.

Revista Argentina de Cardiologia, Buenos Aires

3: 325-408 (Nov.-Dec.) 1936

*Asynchronism of Ventricular Contraction in Bundle Branch Block. A. Battro, E. Braun-Menendez and O. Orias.—p. 325.
Interauricular Communication and Pericardial Symphysis: Case. P. Cossio and I. Berconsky.—p. 360.
Myocarditis of Productive Type of Probable Syphilitic Origin: Case. T. Castellano, Dacia Deza Cenget and R. Lascano.—p. 367.

Ventricular Contraction in Bundle Branch Block.—Battro and his collaborators state that by obtaining simultaneous graphic records of the venous pulse and the heart apex impulse and of the central arterial pulse and the heart sounds, one is able to ascertain whether the ventricles contract simultaneously or asynchronously. The authors used the procedure in twenty cases in which the electrocardiograms showed right bundle branch block. The electrocardiograms were of the classic type (Lewis, Mahaim and Rothberger) in seventeen cases and of Wilson and his collaborators' type in three. In fifteen cases of the classic group the graphic records showed asynchronism with premature contraction of the right ventricle over that of the left, which was an indication of left bundle branch block. In two cases in the group the contraction of the ventricles was synchronous. In one case in the group of patients having electrocardiograms of Wilson's type, the contraction of the left ventricle took place before that of the right and in two cases in the same group there was no asynchronism. The authors conclude that the electrocardiogram alone is too unreliable to determine the presence of ventricular asynchronism for the diagnosis of complete bundle branch block. By graphically recording the mechanical phenomena of the heart action, the presence and intensity of ventricular asynchronism as well as the location of the lesion on either branch can be ascertained and a reliable diagnosis made.

Archiv für Verdauungs-Krankheiten, Berlin

61: 1-112 (Feb.) 1937. Partial Index

*Combined Tolerance Test (Water, Sodium Chloride, Urea) as Functional Test of Nephritic Disorders. G. Weitzmann.—p. 1.
Etiology of Cardiotonic Dilatation of Esophagus (So-Called Cardiospasm). Elisabeth Opitz.—p. 21.
Embolic Focal Gastritis. K. Lühr.—p. 33.
*Can Ptosis of Viscera, Particularly of Stomach, Be Compensated by Abdominal Support? W. Kaufmann.—p. 39.
Water-Sodium Chloride-Nitrogen-Tolerance Test For Detection of Disturbances in Renal Elimination in Obese and Emaciated Persons. Hildegard Bretschneider.—p. 49.

Water-Sodium Chloride-Urea Tolerance Test.—Weitzmann says that the combination tolerance test with water, sodium chloride and urea, the technic of which he described in an earlier report, is helpful in all cases in which the elimination of water, salt and urea is impaired. In this paper he discusses different groups of such disturbances. He shows that the acute nephritides, in which permanent anatomic changes are still absent, must be differentiated from the so-called residual conditions, from the chronic nephritides and from contracted kidney. In acute nephritis the combination tolerance test does not permit definite conclusions with regard to the type and severity of the disorder or the therapeutic-dietetic measures. The residual conditions, that is, those in which a cure with defect must be assumed, nearly all show an abnormal behavior in the tolerance test; nevertheless, the elimination of water, sodium chloride and urea is usually adequate. In the chronic nephritides, however, there is usually a retention of water, sodium chloride or nitrogen, or of several of these substances. The combination tolerance test discloses not only the type of the functional disturbance but also the incapacity to compensate for it. The impairment of the elimination involves particularly the sodium chloride, for, if from 12 to 14 Gm. is taken in, less than 6 Gm. is eliminated. The nitrogen elimination is likewise impaired: if from 12 to 15 Gm. is taken in, the elimination is rarely below 8 Gm. The water elimination varies greatly in different cases of chronic nephritis. In contracted kidney likewise the water elimination varies considerably. In severe cases with chronic uremia, polyuria may exist. However, if a cardiovascular insufficiency develops, the diuresis usually decreases. In this terminal stage of contracted kidney the specific gravity of the urine remains constantly the same. After describing and discussing typical cases, the author reaches the conclusion that the combined water-sodium chloride-urea tolerance test is a valuable functional test during all the stages of hemorrhagic nephritis. In comparison to the plain water tolerance test, the combination tolerance test gives more information about the complicated processes of renal elimination, their regulatory mechanisms and their compensatory capacities. The evaluation of the results of the tolerance test permits a more exact dietetic treatment.

Treatment of Visceral Ptosis by Abdominal Support.—Kaufmann points out that Glénard first applied the term visceral ptosis and suggested abdominal supports for its correction. These bandages, which have pads on the inside, lift up the prolapsed organ. The author thinks that they have not been used as much as they should. He gives his attention chiefly to ptosis of the stomach, pointing out that, in view of the hydrostatic pressure balance in the abdominal cavity, it is sufficient to lift the prolapsed stomach, as the other abdominal organs are lifted with it. In case of an obese but dilated abdomen, the prolapsed stomach and the entire abdominal contents can be lifted and drawn backward toward the vertebral column by a specially designed abdominal support. If visceral ptosis exists in thin persons, the support must have a special pad on the inside. After discussing and illustrating the design of the abdominal supports, the author cites histories of patients in whom he found the abdominal support helpful, such as cases of gastric dilatation in pyloric stenosis, a case of severe kyphoscoliosis, a case of gastric dilatation after duodenal ulcer, and a case of ptosis of the stomach after gastro-enterostomy.

Klinische Wochenschrift, Berlin

16: 289-328 (Feb. 27) 1937. Partial Index

*Forms of Diphtheria Bacillus and Chemical Aspects of Diphtheria. H. Otto and G. Mittag.—p. 294.
Hypertonic-Atonic Dysphagia in Nurslings with Habitual Vomiting. W. Catel.—p. 296.
Chronic Poisoning with Soporifics. H. Oettel and A. Krautwald.—p. 299.
Antinarcotic Action of Follicle and Testis Hormones. T. P. Störtebecker.—p. 302.
Etiology, Prognosis and Therapy of Atrioventricular Block. E. Lauf.—p. 303.
Continuous Resistance to Therapy of a Pallida Strain in Animal Experiment. M. A. Schoch.—p. 306.
Comparative Determination of Cevitamic Acid Content of Various Animal Organs. A. A. Policard and M. Ferrand.—p. 308.

Clinical Aspects of Diphtheria.—Otto and Mittag report their observations in seventy-three cases of diphtheria. They found that all three types (mitis, intermedius and gravis) may appear in the course of one epidemic. Healthy bacillus carriers may harbor not only the mitis type but also the intermedius

and the gravis types. In two cases the authors observed first an intermedius type and then a mitis type. In siblings they observed the same as well as different types of diphtheria bacilli. Complications may develop in the presence of type mitis, intermedius and gravis. It was observed that some of the severest complications developed in patients with the mitis type of diphtheria bacillus. The percentage of complications was also highest among the patients with the mitis form. The mitis type predominated in the material analyzed by these authors, but they say that other types have been found to predominate in other regions. However, since it cannot be said that the gravis type of diphtheria bacillus causes severe forms of diphtheria and the mitis type mild forms, the authors suggest that the types gravis, mitis and intermedius be designated as types I, II and III, respectively, so as to avoid erroneous ideas regarding the clinical manifestations of the diphtheria caused by the various types of bacillus.

Medizinische Welt, Berlin

11: 267-300 (Feb. 27) 1937. Partial Index

*Value of Encephalogram in Differential Diagnosis Between Hereditary and Symptomatic Forms of Epilepsy. F. Laubenthal.—p. 267.
Lymphogranulomatosis: Clinical Diagnosis on Basis of Blood Status, Puncture Method, and so on, and Differential Diagnosis. V. Schilling.—p. 272.
Relapse Following Treatment of Carcinoma of Cervix Uteri. K. Tietze.—p. 276.
Cure of Postencephalitic Parkinsonism by Bulgarian Folk Remedy. P. Nikoloff.—p. 279.
Hypophysis and Stomach. K. Herman.—p. 281.
Practitioner's Contribution to Problem of Appendicitis. S. König.—p. 283.

Encephalography in Differential Diagnosis of Epilepsy.—Laubenthal shows that encephalography has acquired considerable importance in the differentiation between the hereditary and symptomatic forms of epilepsy. His observations in several hundred cases proved that, with the exception of temporary discomfort and disturbances, encephalography has no undesirable effects. In the cases described in this report he applied the diagnosis of hereditary epilepsy only to those cases in which epilepsy was present among the blood relations and in which there was no record of an exogenic lesion. In summarizing his encephalographic observations in the cases of hereditary epilepsy, he says that a large number show encephalographic changes. There are unilateral or bilateral enlargement of the ventricles, dilatation, particularly of the third ventricle, and occasionally also a lack of ventricular filling on one or both sides. The subarachnoidal filling may be increased, irregular or spotted. However, the author failed to observe in cases of hereditary epilepsy extremely severe (hydrocephalic) degrees of ventricular dilatation, also extensions, displacements and sinuosities of the ventricules. He thinks that circumscribed changes in the subarachnoidal filling are rather indicative of a local process, particularly in doubtful cases. He emphasizes that encephalography should always be combined with exact anamnestic studies and careful neurologic examinations, for, although the encephalogram may be the deciding or corroborating factor in the differential diagnosis, it may also fail to clarify it.

Wiener Archiv für innere Medizin, Vienna

30: 1-126 (Feb. 28) 1937. Partial Index

Lymphatic Leukemias with Aspects of Thrombopenic Purpura, Hemolytic or Aplastic Anemia and Agranulocytosis. R. Klima and H. Seyfried.—p. 1.
Action of Narcotics That Influence Diencephalic Centers in Exophthalmic Goiter. E. Fenz.—p. 15.
Mineral Metabolism in Case of Addison's Disease. H. Kaunitz.—p. 57.
*Wheal Resorption Time During Volhard's Water Test. C. V. Medvei and P. Lehndorff.—p. 65.
Bronchial Carcinoma at Site of Former Trauma. W. Pilgerstorfer.—p. 71.
Pathogenesis and Treatment of Idiopathic Spontaneous Pneumothorax. A. Sattler.—p. 77.

Wheal Resorption Time During Volhard's Water Test.—Medvei and Lehndorff point out that the intake of large amounts of fluid, such as in the Volhard water test, causes a change in the fluid exchange between blood and tissue and vice versa. Immediately after the water has been taken there is a retardation of the passage into the blood of subcutaneously injected uranin; but one hour later the resorption time is again as before the administration and two or three hours later it is frequently somewhat accelerated. In pathologic processes such as nephritis, carcinoma and icterus, these conditions are different and thus conclusions can be drawn about the condition of the "prekidney." The authors decided to determine whether the more simple wheal test (McClure and Aldrich) together with the water test might not be helpful in the functional examination of kidney and "prekidney." They made the wheal test in connection with the water test in a number of patients and in control cases. They found that there were no significant differences between the resorption time of the wheal (made according to the method of McClure and Aldrich with solution of sodium chloride) before and after the intake of 1,500 cc. of fluid. Thus it is impossible to substitute this simpler test for the more complicated uranin resorption and Volhard test. The authors point out further that their results contradict also Pugliese's observation that the wheal resorption time is prolonged during the water tolerance test and shortened during thirst.

Wiener medizinische Wochenschrift, Vienna

87: 253-288 (March 6) 1937. Partial Index

*Symptom of Body Rotation in Disease of Frontal Brain. J. Gerstmann.—p. 255.
*Treatment of Neurologic Complications of Pernicious Anemia. K. Hitzenberger.—p. 257.
Question of Hereditary Factor in Nervous Disorders, Particularly in Multiple Sclerosis. O. Marburg.—p. 260.
Action Mechanism of Malariotherapy in Changes of Hematomeningeal Barriers. D. Paulian.—p. 264.
Estimation of Drug Addicts. A. Pilcz.—p. 267.
Significance of Past Lethargic Encephalitis for Aspects of Diseases of Different Origins. E. Stengel.—p. 283.
Bacillosis of Blood and of Cerebrospinal Fluid. R. Weeber.—p. 285.

Body Rotation in Disease of Frontal Brain.—Gerstmann shows that spontaneous rotation movements occur not only in disorders of the cerebellum and of the middle peduncles of the cerebellum but also in persons with lesions of the frontal brain. He observed that the latter patients exhibit the spontaneous rotation only when in the erect position. The movements are not so much rotations around the patient's own axis but rather tend to form circles of various radii. The rotation movements appear especially when the patient stands with the feet close together and they become intensified when the eyes are closed. It is also noteworthy that they are not accompanied by vertigo or by changes in the position of the eyes. Passive or active turning of the head influences the symptom in that movement of the head toward the side of the affected frontal brain resulting in an intensification of the rotations in this direction, whereas movement of the head toward the opposite side either has no effect on the rotation or intensifies it in the direction homolateral to the lesion. The author observed further that the symptom of rotation in lesions of the frontal brain is accompanied by disturbances in the equilibrium; that is, by a tendency to fall. However, it appears that the falling movements and the rotations tend in opposite directions. Whereas the direction of the fall is backward or contralateral to the lesion, the rotation is in the homolateral direction. To be sure, this difference in directions is noticeable only as long as the brain lesion is limited to one side. As soon as the other side becomes involved (growth of tumor) this symptom becomes irregular and confused. After pointing out that the combination of rotation and disturbed equilibrium has been corroborated in animal experiments, the author concludes that the rotation movements, although elicitable by lesions in various parts of the central nervous system, nevertheless have aspects that are characteristic for frontal lesions. In case of lesions of the frontal brain, the rotation movements appear only if the patient is in the erect position, whereas in case of cerebellar lesions they are present also when the patient is sitting or lying down.

Neurologic Complications of Pernicious Anemia.—Hitzenberger says that, if a funicular myelitis exists in pernicious anemia, the most potent preparations should be used. Whereas in pernicious anemia that is not complicated by funicular myelitis an erythrocyte count of about 4,000,000 and a hemoglobin content of 80 per cent may be regarded as adequate, in patients

with funicular myelitis this is not sufficient. In the latter patients, efforts should be made to bring the erythrocyte count up to 5,000,000 and the hemoglobin content to 90 or 95 per cent and even after that the injections should be continued. Depending on the severity of the case, 2 cc. of a potent preparation should be injected daily or every second day, for a period of from four to five months. Thus it is possible to influence even the apparently hopeless cases. There is no danger of a polycythemia even if the normal values are exceeded. The substances that are effective against the nervous symptoms apparently are present in such small quantities that large amounts of liver extract must be administered. There are factors which make it probable that funicular myelitis is an avitaminosis. However, there are only few reports about the therapeutic efficacy of vitamin B when given alone. Stomach preparations are effective against funicular myelitis and should be tried. In especially severe cases they should be given in combination with liver extract.

Polska Gazeta Lekarska, Lwów

16: 233-250 (March 28) 1937

Electrocardiographic Researches in Angina Pectoris from Effort, with Especial Attention to Fourth and Fifth Derivation. M. Burak.—p. 233.
Simple Apparatus for Receiving, Preserving and Making Transfusion of Conserved Blood. J. Aleksandrowicz.—p. 235.
*Probation Therapy in Typhoid with Neoarsphenamine and Sodium Dehydrocholate. R. Wygowski.—p. 236.
New Ways of Chemotherapy in Erysipelas. J. Gotlib.—p. 240.

Typhoid Therapy with Neoarsphenamine and Sodium Dehydrocholate.—Wygowski says that there is no specific remedy for typhoid. He divides typhoid therapy into therapy to increase the resistance of the organism, bactericidal therapy, symptomatic therapy and physical therapy. He treated fifty patients ranging in age from 15 to 45 years, forty male and ten female, who usually were admitted to the hospital from one to one and a half weeks after the beginning of their sickness. All the cases were severe and the treatment was administered when there was no contraindication, such as liver, kidney and heart diseases. He used Lucherini and Liuzzo's method of intravenous injection of neoarsphenamine and sodium dehydrocholate. He obtained the following results: Ninety-four per cent of the patients were favorably influenced, showing general improvement and quicker subsidence of symptoms. The duration of the disease was shortened to thirty-two days, while it lasted thirty-nine days in the controls. Complications, such as pneumonia, inflammation of the middle ear and hemorrhage, were reduced to 2 per cent. There were no deaths, while the controls showed a mortality of 6.8 per cent. After recovery no Eberth's bacilli were found in three successive examinations of urine and feces, while there were 12 per cent of typhoid carriers among the controls. After the temperature became normal the blood of the patients treated with neoarsphenamine and sodium dehydrocholate was found to be practically normal. In only one case have symptoms of irritation of the brain cortex been observed, but they subsided spontaneously without leaving after-effects.

Vrachebnoe Delo, Kharkov

19: 1015-1146 (No. 12) 1936

Specific Character of Reactive Phenomena in Early Congenital Syphilis. L. A. Sobolev.—p. 1015.
Comparative Value of Retroplacental and Umbilical Blood in Diagnosis of Syphilis. A. M. Petrov, M. K. Klimenko and T. P. Shchokotova.—p. 1023.
Method of Treatment of Primary Forms of Syphilis. B. J. Kaplun and I. M. Orman.—p. 1031.
*Activation of Specific Treatment of Syphilis by Subcutaneous Insufflation of Oxygen. M. A. Rosentul, A. D. Bogodarov, M. M. Plotkina and A. M. Khaletzkaya.—p. 1041.
Effect of Mud Baths on Rheumatic Diseases. A. P. Korchov and B. M. Rabinkaya.—p. 1051.
Peculiarities of Clinical Course of Primary Cancer of Lung. E. B. Kremerman and T. G. Segal.—p. 1055.

Treatment of Syphilis and Subcutaneous Insufflation of Oxygen.—Rosentul and his collaborators consider the fact established that oxygen, when introduced under the skin, will be utilized by the organism and that it will activate the vital processes, neutralize toxic metabolic products and cause their more rapid elimination. Rosentul conceived the idea that by increasing the oxygen content of the tissues of the syphilitic patient he would create unfavorable biologic conditions for the anaerobic spirochetes. Voegtlin and Smith assert that neoarsphenamine solutions increase their parasitotropic effect when acted on by oxygen, but that they at the same time become more toxic to the organism, and they as well as Stühmer and Bering maintain that neoarsphenamine when injected becomes effective after first undergoing oxidation. The authors administered to rabbits infected with syphilis and exhibiting hard chancres half the minimal sterilizing dose of neoarsphenamine, namely, 0.007 cc. per kilogram of body weight, while at the same time introducing subcutaneously from 300 to 500 cc. of oxygen. They were able to demonstrate much more rapid disappearance of the spirochetes than in the control animals, which were given the same dose of neoarsphenamine but not the oxygen. The authors treated 140 patients having primary syphilis with the combined neoarsphenamine, bismuth and oxygen treatment. They have selected patients with pronounced clinical symptoms, large chancres and marked adenopathy. Oxygen was administered from forty to sixty minutes before or after each injection of neoarsphenamine, an average of from twenty to twenty-five oxygen insufflations being given in one course. The time necessary for the complete disappearance of the spirochetes was much shorter than in the controls. The effect on the blood picture and the weight of the patients was a favorable one. All the patients remained seronegative after one course of treatment. The authors feel that the results obtained were superior to those obtained with the old method and that insufflation of oxygen activates the chemotherapeutic properties of neoarsphenamine.

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81: 989-1116 (March 6) 1937. Partial Index

Bleeding at Onset of Delivery with Death of Child (Velamentous Placenta). J. L. H. Specken.—p. 998.
"Block Formation" (Bony Fusion of Vertebrae) in Tuberculous Spondylitis. R. J. Harrenstein and G. J. Huët.—p. 1002.
*Dangers of Arteriography. E. Verschuyl.—p. 1007.
*Asthmatic Constitution and Therapy of Bronchial Asthma. A. A. Van der Kroon.—p. 1013.

Dangers of Arteriography.—Verschuyl says that a review of the literature reveals that arteriography may result in various complications. He himself describes two cases. The first patient was a man, aged 70, who was hospitalized on account of an acute attack of severe pain in the right leg, which was pale and cold. The anamnesis revealed that he had had mild attacks of pain in the leg for a number of years. It was suggested that the arterial blood stream had become obstructed as the result of spasm or of embolus. Arteriography was resorted to and it revealed the site of obstruction, but not whether the cause was spasm or embolism. To be sure, the removal of an embolus proved unnecessary, because shortly after the injection of the arteriographic contrast medium, color returned into the leg, the patient could move it again and it felt warm. Nevertheless, the patient died suddenly. The necropsy revealed an extremely large retroperitoneal hematoma and the author thinks that it was the direct result of the puncture of the aorta, which was made for the arteriography. The second patient was a woman, aged 28, who had pain, cyanosis and swelling of the right arm. In order to perform an arteriography, contrast medium was injected into the subclavian artery. Immediately after this injection the patient had a typical epileptic attack, but she finally recovered. The author points out that the literature likewise reports cases of epileptic attacks in the course of angiography. He thinks that, in view of the dangers which are involved, arteriography should be resorted to only as a last resort.

The Asthmatic Constitution.—Van der Kroon shows that a number of factors enter into the development of asthma. The main factor is of a constitutional nature and is designated as asthmatic basis. Under this heading he directs attention to metabolic factors, the sympathetic nervous system, the endocrine equilibrium, dietetic factors, the mineral and water exchanges and so on. Further he discusses the predisposition of the organ, pointing out that the action of nervous stimuli

is dependent on the condition of the organ that responds to them. As regards bronchial asthma, the author stresses the importance of bronchitis. In discussing the treatment of bronchial asthma, he shows how to influence the various factors that play a part in the development of the disorder. He mentions the use of endocrine preparations, dietetic measures and psychotherapeutic treatment. In order to counteract the bronchitis, all disorders of the respiratory tract must be treated.

81: 1117-1216 (March 13) 1937. Partial Index

Urinary Incontinence in Case of Incarceration of Pregnant Uterus in Small Pelvis. R. Van Akkeren.—p. 1118.
Atelectasis of Upper Lobe in Children. M. De Bruin.—p. 1124.
*Lead Poisoning in Cigar Makers. G. H. W. Jordans, A. A. S. Zijlmans and J. J. J. C. Broos.—p. 1129.
*Triboulet's Reaction in Localization of Hemorrhages of Digestive Tract. A. Van Meeteren.—p. 1139.

Lead Poisoning in Cigar Makers.—Jordans and his associates observed a large number of cases of lead poisoning among cigar makers. At first they believed that the zinc plate on which the cigar maker cuts the tobacco might be responsible for the lead intoxication, but later it was found that in the region in which most of these cases of lead poisoning occurred the drinking water contained considerable amounts of lead. However, it could not be proved that the lead poisoning of the cigar workers was entirely a drinking-water poisoning. There were indications that occupational factors did play a part. The authors are convinced that the zinc plate with its lead content and the tobacco itself were partly responsible for the lead intoxication. They advise that the zinc plate be eliminated from the process of cigar making.

Triboulet's Reaction.—Van Meeteren points out that Triboulet's reaction is not specific for tuberculosis of the intestine. He reports his experiences with the test on patients with various intestinal disorders. He found that bleeding processes of the intestinal tract can be differentiated in two groups on the basis of Triboulet's test. The first group includes all processes of the upper part of the intestinal tract, that is, the intestinal tract up to and including the duodenum; the second group includes all those in the lower part of the intestinal tract. In the first group the blood that is present in the feces is not detected by Triboulet's test, that is, the test is negative; in the second group it is positive. Thus Triboulet's reaction has differential diagnostic value in the localization of hemorrhages of the digestive tract.

Acta Dermato-Venereologica, Stockholm

18: 1-129 (Feb.) 1937

*New Classification of Syphilitic Changes. J. Almkvist.—p. 1.
*Occurrence of Heterogenic Antibodies (F-Antibodies) in Blood of Patients with Skin and Venereal Diseases. H. Haxthausen.—p. 57.
Syphilitic (Gummatous) Meningitis with Changes in Pituitary Gland (Dystrophia Adiposogenitalis): Case. E. Hval.—p. 64.
Investigations on Bactericidal Characteristics of Several Dermatologic Medicines. T. E. Olin.—p. 81.
Cellular Sensitivity to Tuberculin in Lymphogranulomatosis Benigna Schaumann as Exhibited in Examinations of Isolated Slices of Skin. J. Schaumann and G. Boström.—p. 90.
Cutaneous Type of Periarteritis Nodosa. W. L. L. Carol and J. R. Prakken.—p. 102.
Interesting Case of Blennorrhagic Keratodermia. C. A. Falk.—p. 119.

New Classification of Syphilitic Changes. — Almkvist reviews the early literature of syphilis and points out that Ricord in 1858 arrived at the differentiation of three distinct periods in the development of syphilis. Almkvist says that his own histologic investigations, which have extended over more than twenty years, have led him to doubt Ricord's idea and to arrive at an entirely different conclusion; namely, that the histopathologic changes in syphilis actually represent not different periods, but a uniform state throughout the entire progress of syphilis, modified only by accidental factors. On the basis of his investigations he formulates three general laws for the evolution of the syphilitic lesions: 1. The spirochetes produce in each type of tissue a histologic reaction that is characteristic for the tissue in question but differs from the reaction in other tissues. 2. The changes induced by the syphilitic process in each kind of tissue are of a uniform nature through the entire course of the disease. They are the same in new cases and in those of long standing. 3. The different clinical manifestations of the syphilitic lesions are the result of such factors as the varying location of the spirochetes, differences in the degree of immunity, toxin-antitoxin reactions and nutritional disturbances. Nevertheless, on the basis of the pathologic conditions the author suggests four instead of Ricord's three periods; namely, (1) initial or humoral syphilis, (2) hematogenous syphilis, (3) serpiginous syphilis and (4) old degenerative syphilis.

Occurrence of Heterogenic Antibodies. — Haxthausen says that heterogenic antibodies are present in most human serums and that recent investigations have shown that F-antigens are extremely prevalent in nature. Several investigators proved that the amount of F-antibodies varies greatly in human serums. Age seems to exert a certain influence, for new-born babies do not possess antibodies at all, but during the first year of life the amount increases and reaches its maximum between the fifth and tenth years. There have been different explanations of this spontaneous appearance of F-antibodies in human serum. One of these considers various infections as the source. In infectious mononucleosis the serum contains especially large quantities of F-agglutinin. F-hemolysins have been observed to increase during pneumonia. High hemolysin and agglutinin titers have been demonstrated in tonsillitis, diphtheria and scarlet fever. This theory of the infectious origin is made even more probable by the fact that F-antigens have been observed in a large number of pathogenic micro-organisms. Nevertheless, infection is doubtless only one of several sources of F-antibody production. Lifeless antigens, such as horse serum, have been proved to have this effect. In order to throw light on the occurrence of F-antibodies in various diseases, the author undertook a series of hemolysin and agglutinin determinations on patients suffering from different skin and venereal diseases, and on a number of control subjects. The tables of the results of the tests indicate that such marked divergence from the normal as exists in mononucleosis was not to be found in any of the different diseases examined. In tuberculosis, syphilis and erythema multiforme the figures are more like those of the controls. In other conditions, however, there is an increase in the hemolysin titer. This was most noticeable in pityriasis rosea, so that it seems possible that in this condition there is an increase of F-hemolysin in the serum. In gonorrhea, eczema, psoriasis and alopecia areata the hemolysin exponents appear to be a little higher than normal. In alopecia areata the agglutination value too seems to be greater than normal. Nevertheless, low titers were observed in several typical cases of the aforementioned disorders. Conditions such as favus, trichophytia and epidermophytia were represented only by one or a few cases, but all these cases showed a high hemolysin titer. One case of Boeck's sarcoid, one case of erysipeloid and three cases of inguinal lymphogranuloma showed high hemolysin exponents. Among the eczemas in children there is a distinct difference between the pityriasis simplex group and the allergic group. In the first group the titer is only slightly above the normal, but in the allergic eczemas the hemolysin exponents are extremely high.

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99: 213-240 (Feb. 25) 1937

Some Considerations in Understanding and Judgment of "Unspecific" Seroreactions for Syphilis. A. Kissmeyer.—p. 213.
Treatment of Hemorrhagic Nephritis with Diet Rich in Protein. A. Næraa.—p. 216.
*Keratoconjunctivitis Sicca. E. and T. Dalsgaard-Nielsen.——p. 219.

Keratoconjunctivitis Sicca. — The Dalsgaard-Nielsens report seven cases of this relatively rare disease, considered by them as a distinct entity. They state that Sjögren found nineteen cases, all in women, from a policlinic material of 36,000. In the main the disease occurs in women past the age of 40 and near or during the climacterium; two thirds of the patients have a history of rheumatic fever or signs of changes in the joints, and the general condition is usually inferior for the age. They believe that in cases of keratosis sicca there is a chronic infection which affects the vegetative nervous system, and a resulting hypofunction of certain glands constitutes the basis for the development of the disease.